

Service Manual

74 PM68 / PM78 /02B/ 02G
PM-68 / PM-78 /FB/ FN
PM-68 /UBL
Integrated stereo amplifier

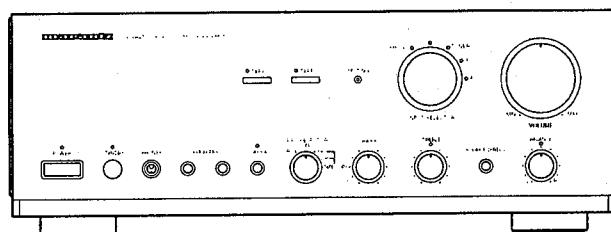
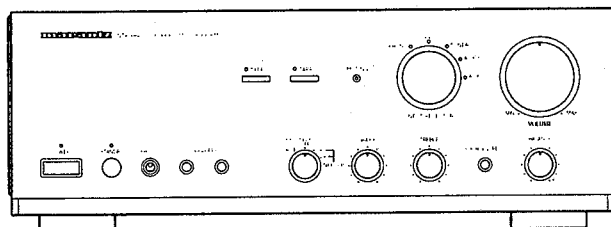


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Please use this service manual with referring to the user guide (D.F.U) without fail.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

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Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

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Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required.
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

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SINGAPORE 159099,
PHONE : +65 475 - 4555
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SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard NO. 1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. SPECIFICATIONS

Power output (class AB operation)

RMS 8ohms (20 Hz -20 kHz)	95W
DIN 8 ohms ..	105W
THD at 8 ohms RMS rated output	0.03%
Damping factor	150

Power out put (PM-78 classA operation)

RMS 8 ohms (20 Hz-20 kHz)	25 W
DIN 8 ohms ..	28 W
THD at 8 ohms RMS. rated output	0.03%
Damping factor	150

IHF dynamic power (class AB operation)

8 ohms /4 ohms /2 ohms	120 / 185 / 220 W
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IHF dynamic power (PM-78 class A operation)

8 ohms/4 ohms/2 ohms	35 / 45 / 50 W
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Magnetic cartridge input (MM)

input sensitivity impedance	2.5 mV/ 47 kOhms
Accuracy of frequency response to IEC RIAA	0.5 dB
Signal to noise ratio	85 dB

Tuner/CD/Aux/Tape inputs

input sensitivity impedance	150 mV / 40 kOhms
Signal to noise ratio	88dB
Frequency response	
(-1 dB limits, Source Direct)	10 Hz - 65 kHz
Tone characteristic (100 Hz and 10 kHz)	± 8 dB
Channel separation	
(1 kHz/10 kHz, Source direct)	> 80 / > 70 dB

General

Power Requirements

/02 versions	230 V AC,50 Hz
U versions	120 V AC,60 Hz

Dimensions

Width	439 mm
Height	159 mm
Depth	375 mm

Weight

Unit alone	12.3 kg
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Specifications subject to change without prior notice

定格出力 (20 Hz - 20 kHz 両チャンネル同時駆動)

クラス AB	100 W x 2 (8 Ω 負荷)
クラス A (PM-78 のみ)	25 W x 2 (8 Ω 負荷)
ダイナミックパワー	
クラス AB	150 W x 2 (6 Ω 負荷)
	190 W x 2 (4 Ω 負荷)
	220 W x 2 (2 Ω 負荷)

全高周波歪率(20 Hz - 20 kHz, 10 W 出力時 8 Ω 負荷)

クラス AB	0.015
クラス A (PM-78 のみ)	0.010 %

混変調歪率 (SMPTE)

出力帯域幅 (8 Ω 負荷, 0.08% 歪率)	10 Hz - 80 kHz
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周波数特性

(CD, ソースダイレクト)	10 Hz - 50 kHz + 0 dB -1 dB
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ダンピングファクター (8 Ω 負荷, 100 Hz - 10 kHz)	130
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入力感度/入力インピーダンス

PHONO (MM)	2.5 mV/47 k Ω
HIGH LEVEL	150 mV/40 k Ω

PHONO 最大許容入力 (1 kHz)

(MM)	150 mV
------------	--------

RIAA 偏差 (20 Hz)	- 2 dB
-----------------------	--------

(40 Hz - 20 kHz)	± 0.5 dB
------------------------	----------

S/N比 (IHF、A ネットワーク、入力ショート)

PHONO (MM)	85 dB
------------------	-------

HIGH LEVEL	109 dB
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トーンコントロール

BASS (100 Hz)	± 8 dB
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TREBLE (10 kHz)	± 8 dB
-----------------------	--------

電源電圧	AC 100 V, 50 Hz/60 Hz
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消費電力 (電気用品取締法)	160 W
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最大外形寸法

幅	439 mm
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高さ	156 mm
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奥行き	375 mm
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質量	12.3 kg
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付属品

リモートコントロール送信機 (RC-68PM)	1 台
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本機の規格および外観は改良のため予告なく変更することがあります。

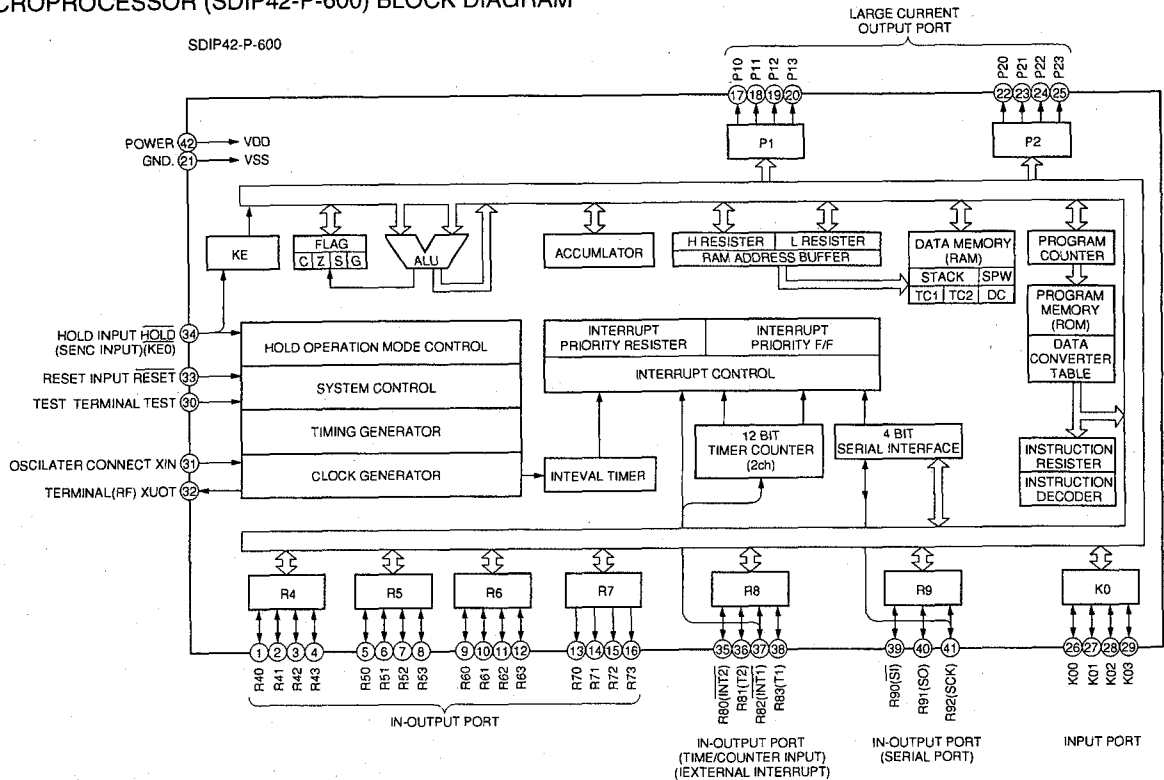
2. TEST EQUIPMENT REQUIRED SERVICING

Item	Use
Distortion Analyzer	Distortion measurements
Audio Oscillator	Sinewave and squarewave signal source
AC VTVM	Voltage measurements (AC)
Oscilloscope	Waveform analysis and trouble shooting and ASO alignment
DC VTVM	Voltage measurements (DC)
AC Wattmeter	Monitors primary power to amplifier
Line Voltmeter	Monitors of primary voltage to amplifier
Variable Autotransformer	Adjust level of primary voltage to amplifier
Circuit Tester	Trouble shooting
Shorting Plug	Shorts amplifier input to eliminate noise pickup

項 目	使 用 方 法
歪 率 計	歪の測定
低 周 波 発 振 器	正弦波および矩型波の信号源
A C V T V M	交流電圧の測定
オ シ ロ ス コ ー プ	波計分析、トラブルシューティングおよび ASO の調整
D C V T V M	直流電圧の測定
交流ワットメーター	アンプの一次側消費電力のモニター
電 源 電 圧 計	アンプの一次側電圧のモニター
ス ラ イ ダ ッ ク	アンプの一次側電圧の調整
テ ス タ ー	トラブルシューティング
ショート用プラグ	雑音を拾わないようにアンプ入力を短絡する

3. IC INFORMATIONS

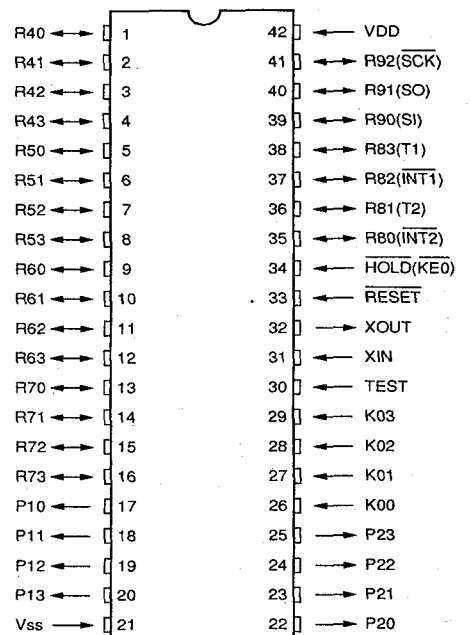
MICROPROCESSOR (SDIP42-P-600) BLOCK DIAGRAM



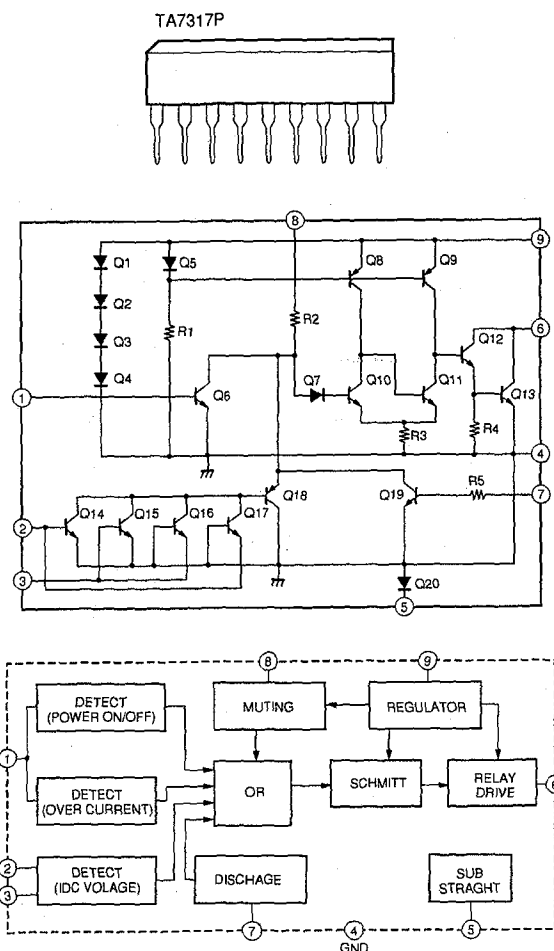
PIN no.	PORT NAME	ACT	FUNCTION
1	R40	MMUT	H MANUAL MUTE SIGNAL MUTE
2	R41	FMUT	L SIGNAL(SOURCE/MONITOR SWITCH)
3	R42	VOUP	L MOTOR DRIVE VOLUME UP
4	R43	VODW	L MOTOR DRIVE VOLUME DOWN
5	R50	T3K	L MONITOR INPUT SWITCH (TAPE3)
6	R51	T2K	L MONITOR INPUT SWITCH (TAPE2)
7	R52	T1K	L MONITOR INPUT SWITCH (TAPE1)
8	R53	AX2K	L SOURCE INPUT SWITCH (AUX2)
9	R60	AX1K	L SOURCE INPUT SWITCH (AUX1)
10	R61	TUNK	L SOURCE INPUT SWITCH (TUNER)
11	R62	CDK	L SOURCE INPUT SWITCH (CD)
12	R63	PHOK	L SOURCE INPUT SWITCH (PHONO)
13	R70	LSTB	L LED INDICATOR STAND BY DISPLAY
14	R71	LMUT	L LED INDICATOR MUTE DISPLAY
15	R72	LPRO	L LED INDICATOR PROCESSOR DISPLAY
16	R73	LTP3	L LED INDICATOR TAPE3 DISPLAY
17	P10	LTP2	L LED INDICATOR TAPE2 DISPLAY
18	P11	LTP1	L LED INDICATOR TAPE1 DISPLAY
19	P12	LSOU	L LED INDICATOR SOURCE DISPLAY
20	P13	LAX2	L LED INDICATOR AUX2 DISPLAY
21	VSS		GND.
22	P20	LAX1	L LED INDICATOR AUX1 DISPLAY
23	P21	LTUN	L LED INDICATOR TUNER DISPLAY
24	P22	LECD	L LED INDICATOR CD DISPLAY
25	P23	LPHO	L LED INDICATOR PHONO DISPLAY
26	K00	1RS	L SOURCE INPUT SWITCH(ROTARY ENCODER) bit1
27	K01	2RS	L SOURCE INPUT SWITCH(ROTARY ENCODER) bit2
28	K02	PRK	L PROCESSOR IN-OUT SWITCH
29	K03	MUK	L MANUAL MUTE
30	TEST		NOT USED (GND)
31	XIN		CLOCK 4.00 MHz (IN)
32	XOUT		CLOCK 4.00 MHz (OUT)
33	RESET	RES	L SYSTEM RESET
34	HOLD	PDW	L POWER DOWN CHECK
35	R80	FXRC	L REMOTE CONTROL INPUT (RC-5)
36	R81	EN1	MODEL SELECT 1
37	R82	EN2	MODEL SELECT 2
38	R83	EN3	MODEL SELECT 3
39	R90	TXRC	L SERIAL DATA(RC-5 REMOTE CONTROL)
40	R91	ENTX	L ENABLE (REMOTE CONTROL)
41	R92	RELY	L STAND-BY RELAY CONTROL
42	VDD		POWER SUPPLY

MICROPROCESSOR (SDIP42-P-600) Position NO.7401

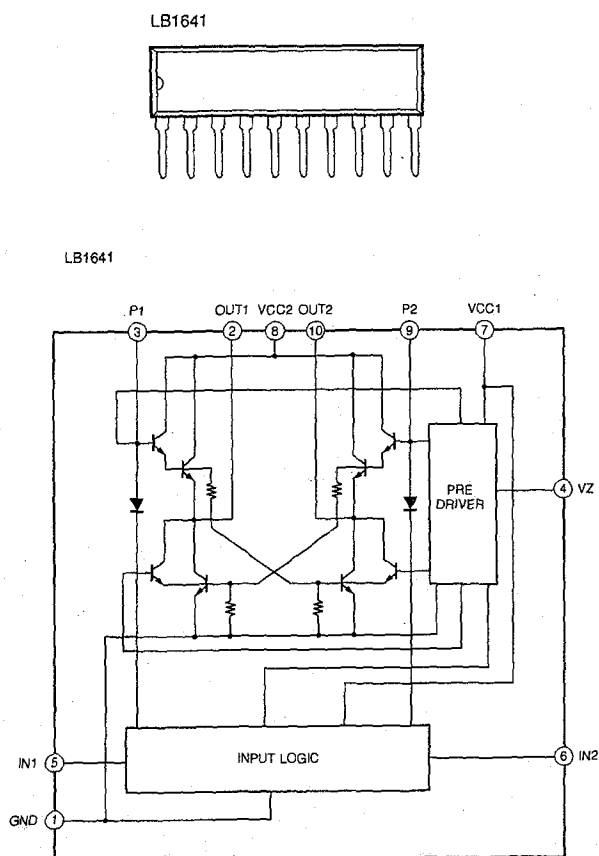
SDIP42-P-600



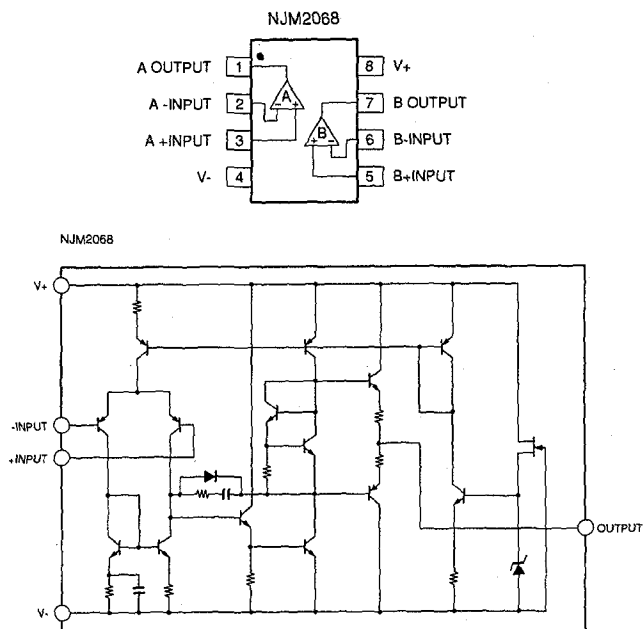
TA7317P (Position NO.7290)



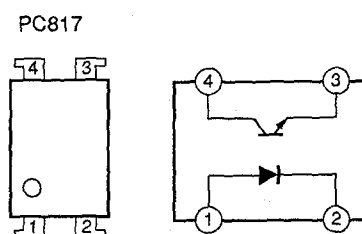
LB1641(Position NO.7402)



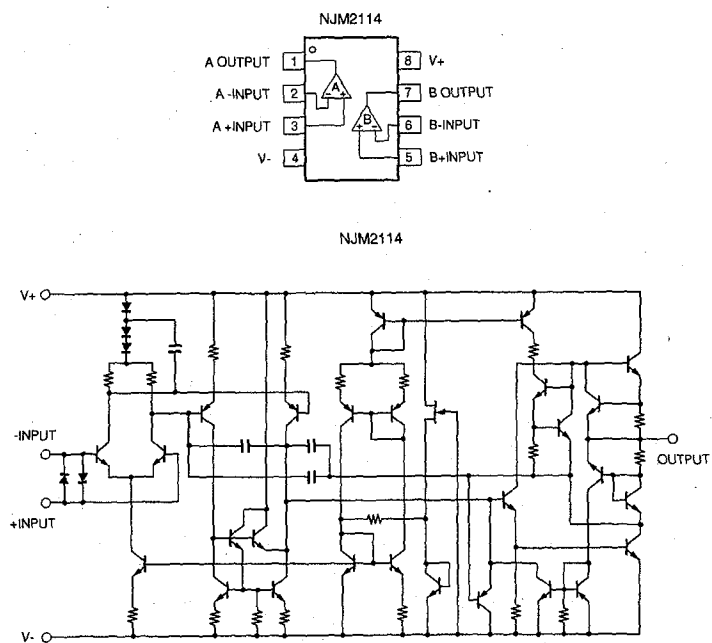
NJM2068 (Position NO.7501,7502,7503)



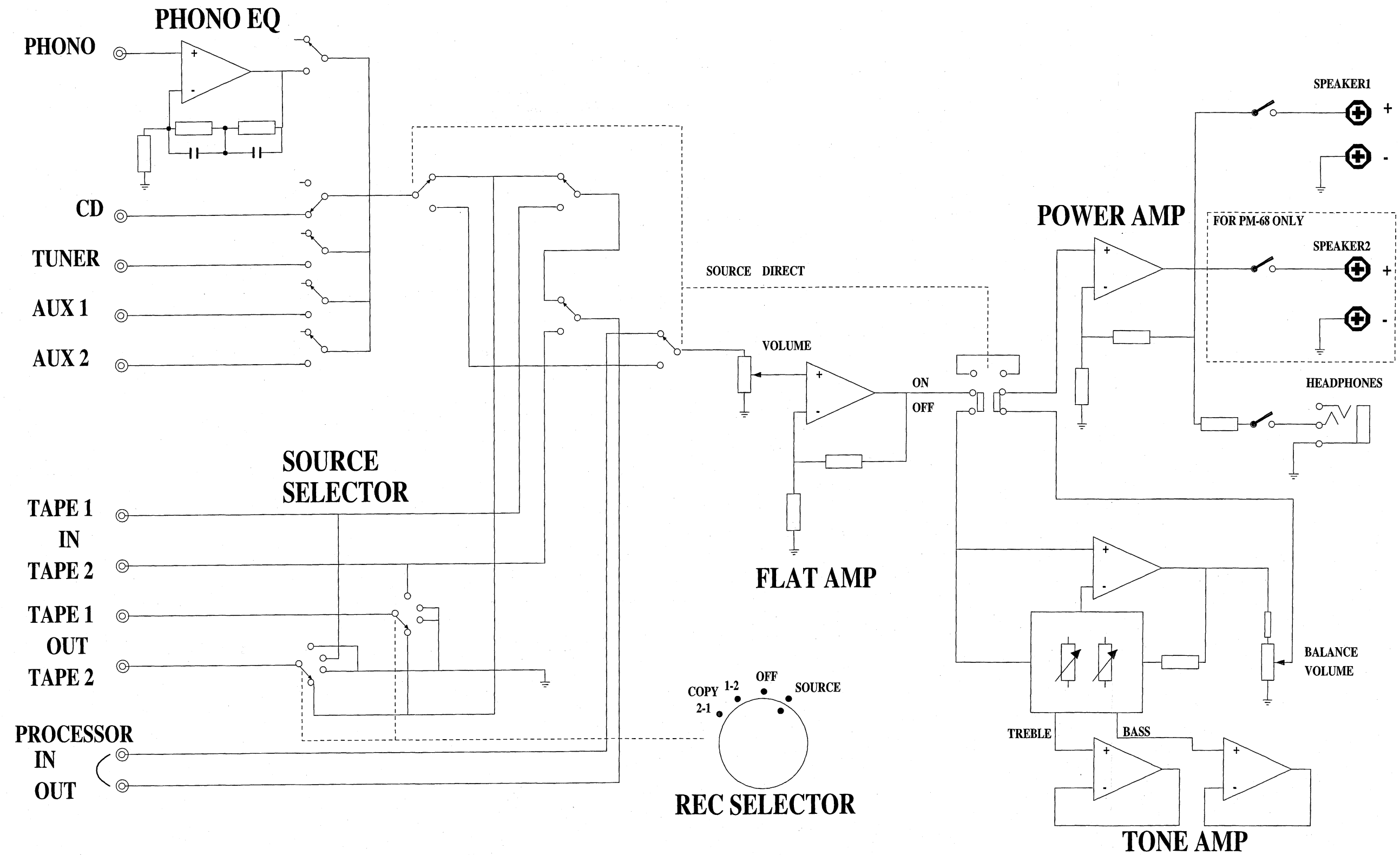
PC817 (Position NO.7269,7270)



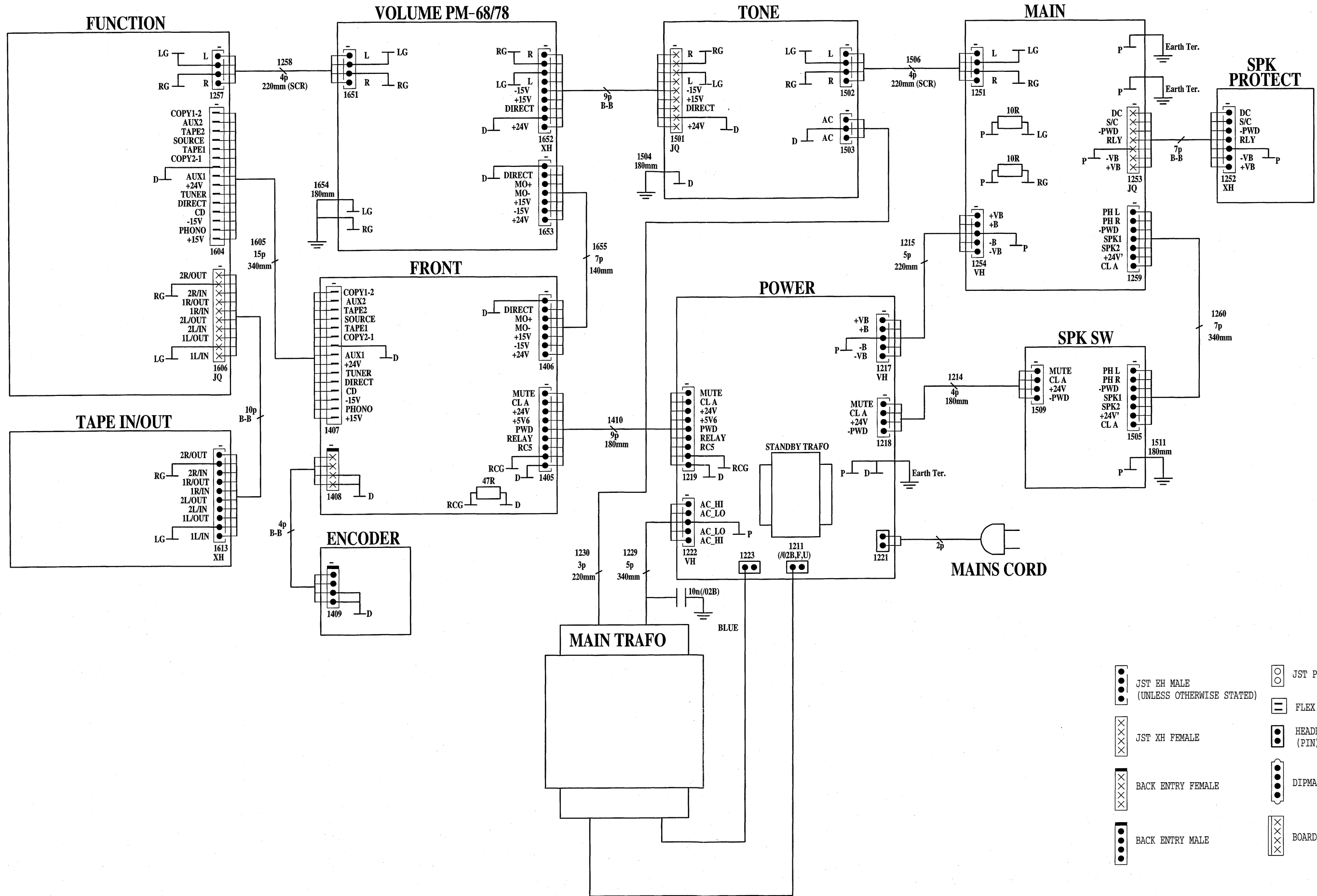
NJM2114(Position NO.7555,7655)



4. BLOCK DIAGRAM



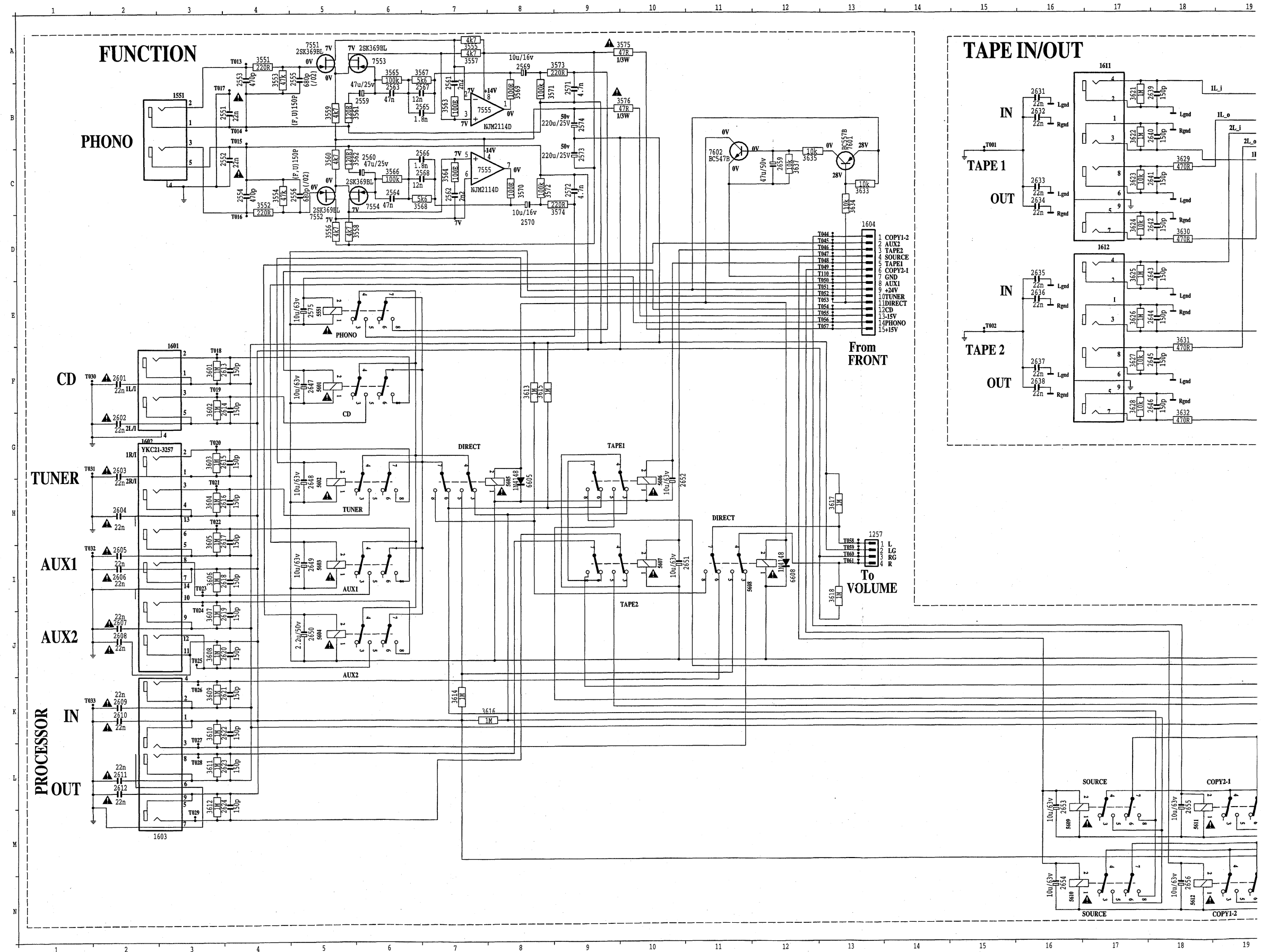
5. WIRING DIAGRAM



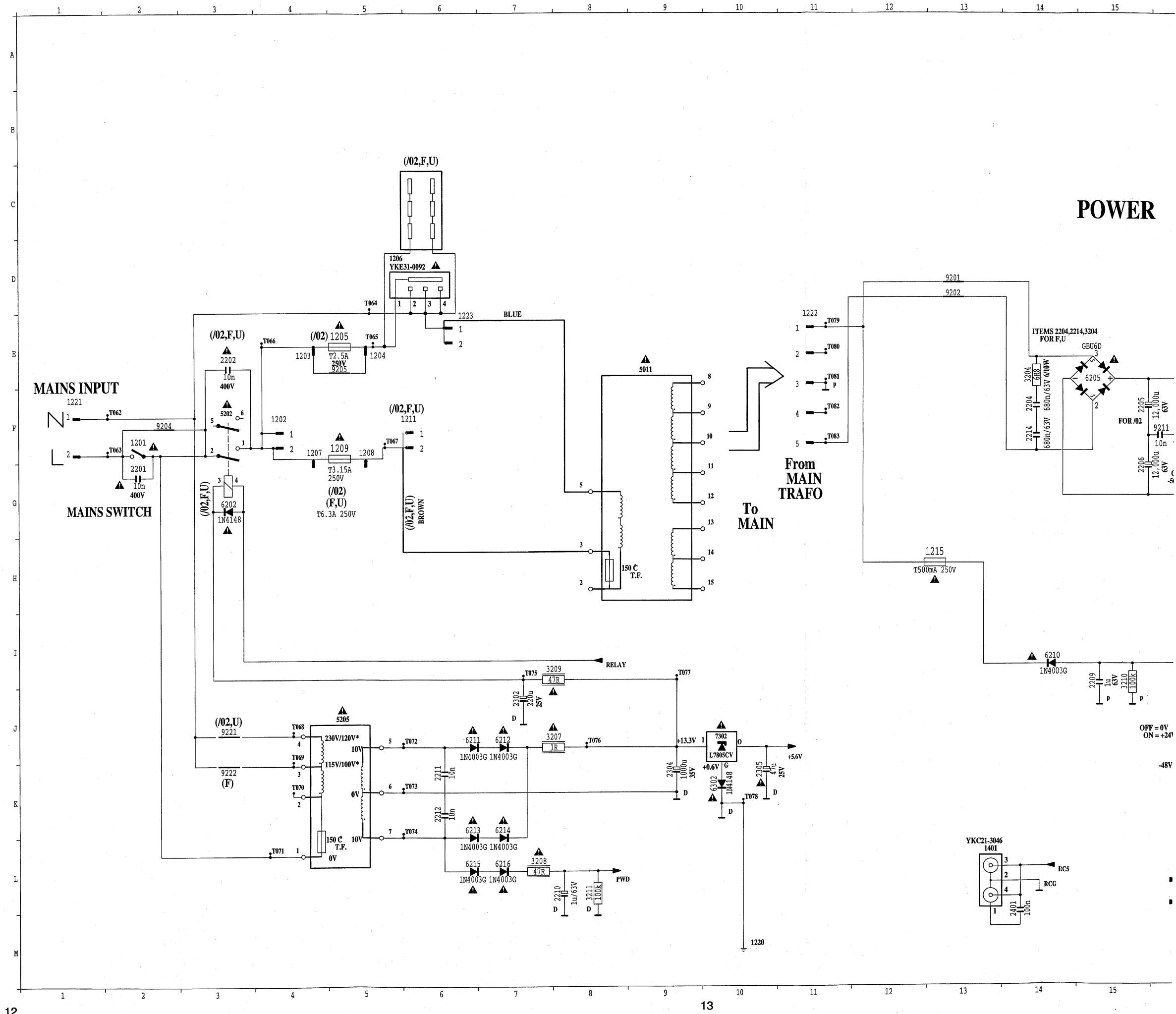
- | | | | |
|--|--|--|-----------------|
| | JST EH MALE
(UNLESS OTHERWISE STATED) | | JST PH MALE |
| | JST XH FEMALE | | FLEX |
| | BACK ENTRY FEMALE | | HEADER
(PIN) |
| | BACK ENTRY MALE | | DIPMATE |
| | | | BOARD IN |

6. SCHEMATIC DIAGRAM AND PARTS LOCATION (PARTS SIDE)

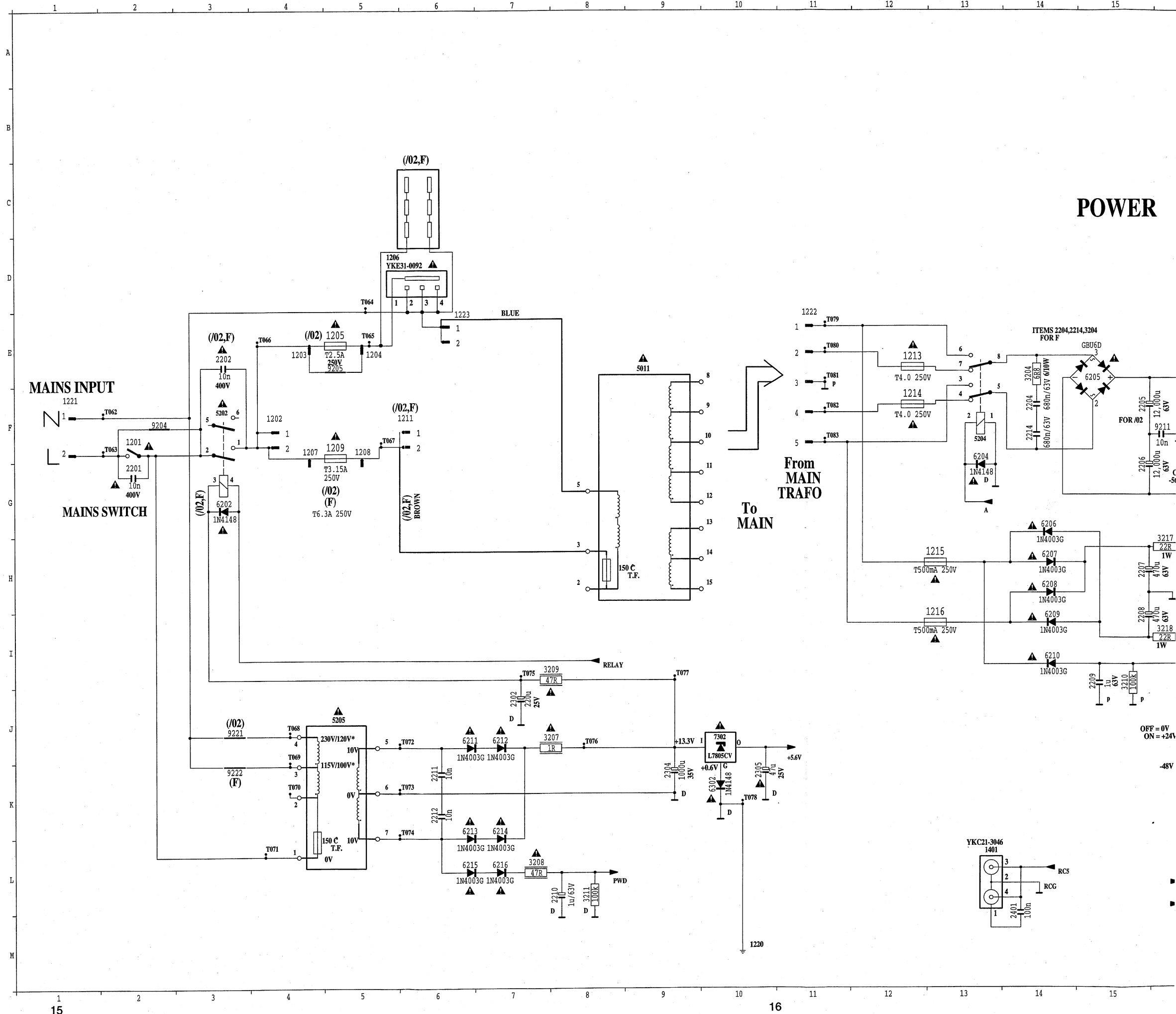
POWER CIRCUIT II

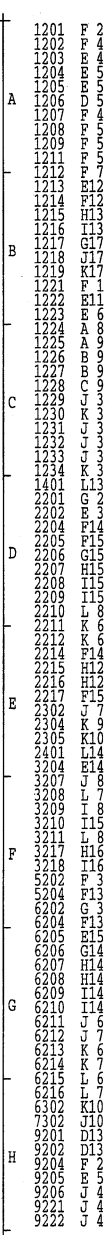


POWER CIRCUIT I (PM-68)

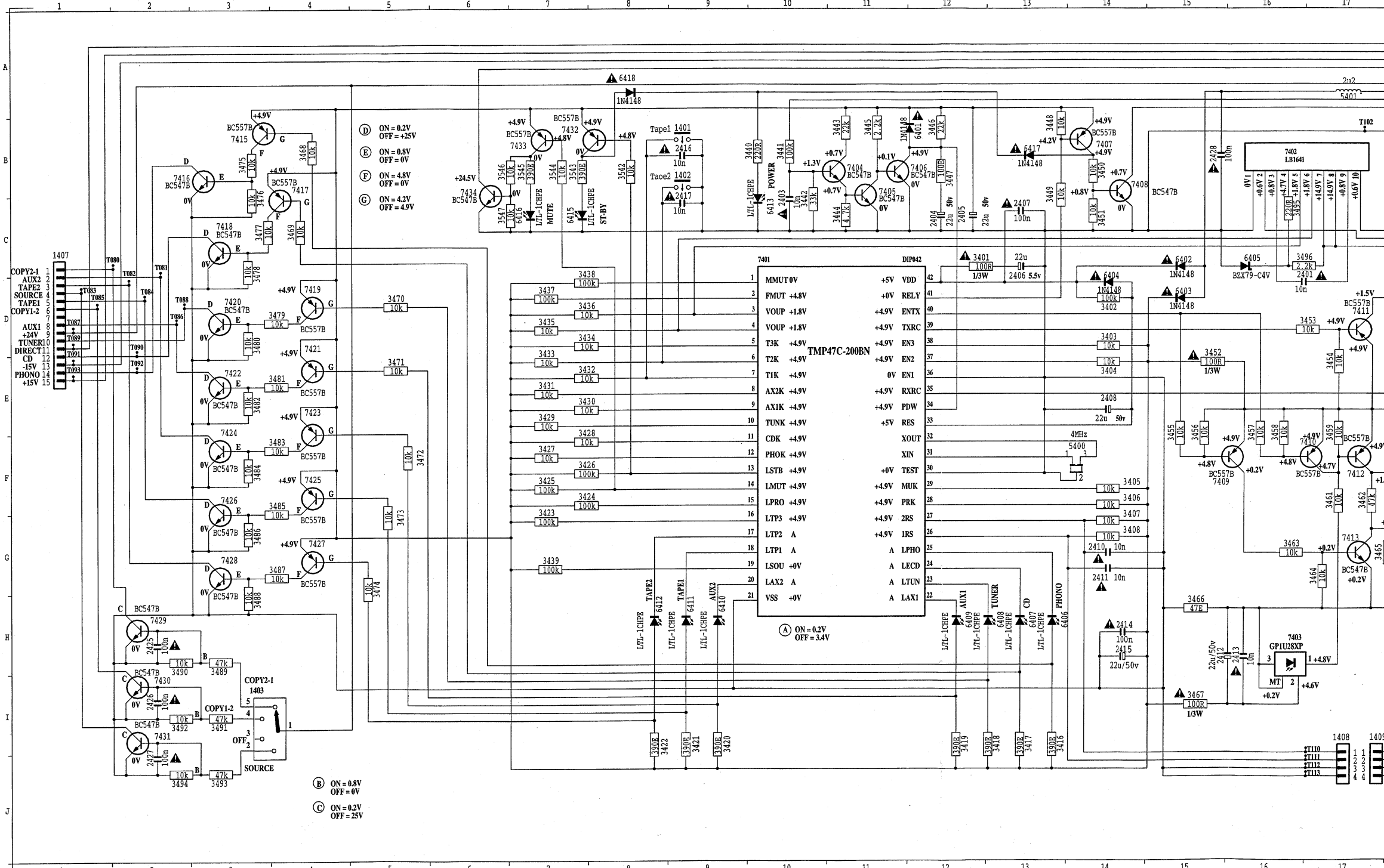


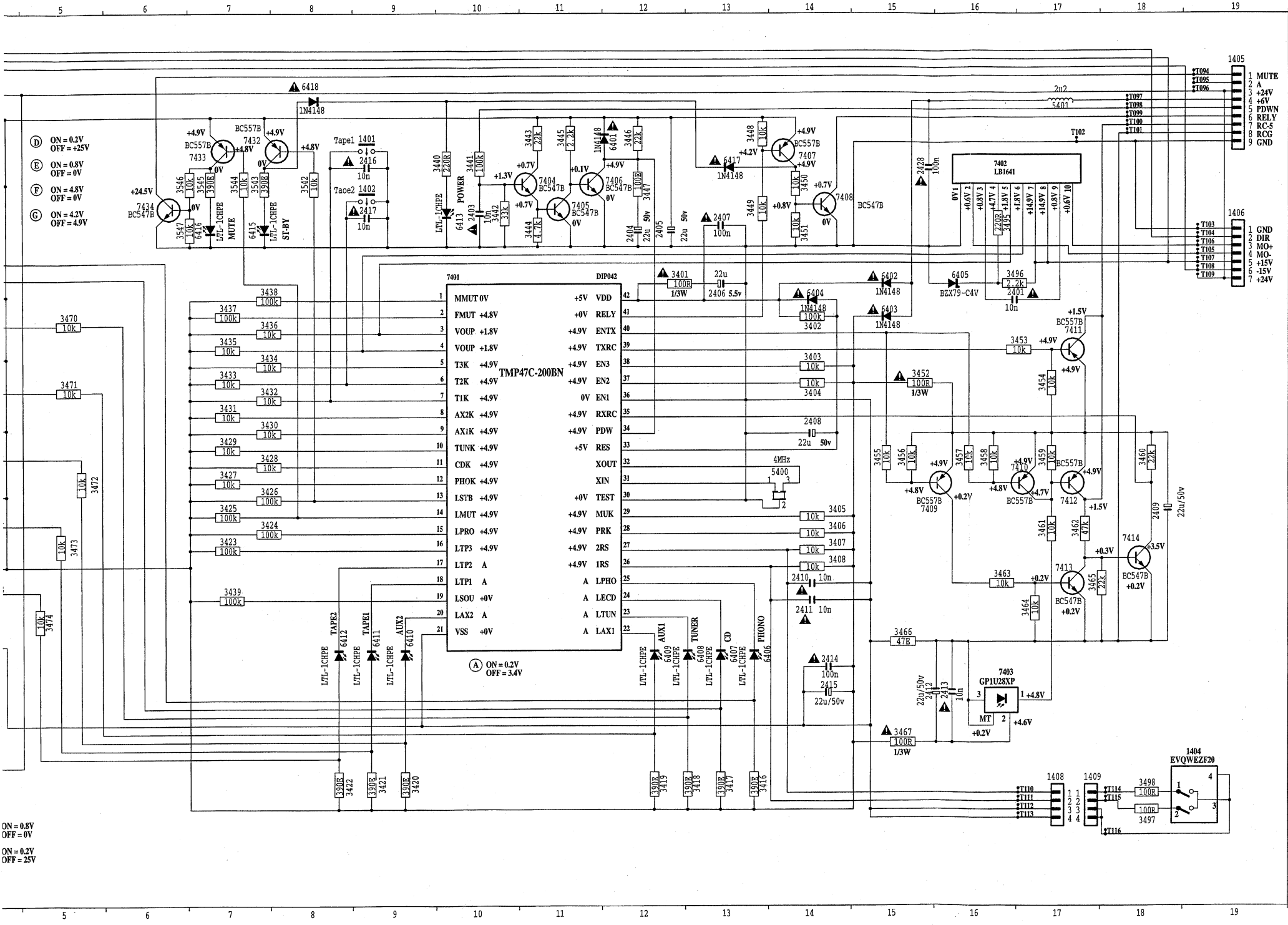
POWER CIRCUIT I (PM-78)





CONTROL CIRCUIT I (PM-68)



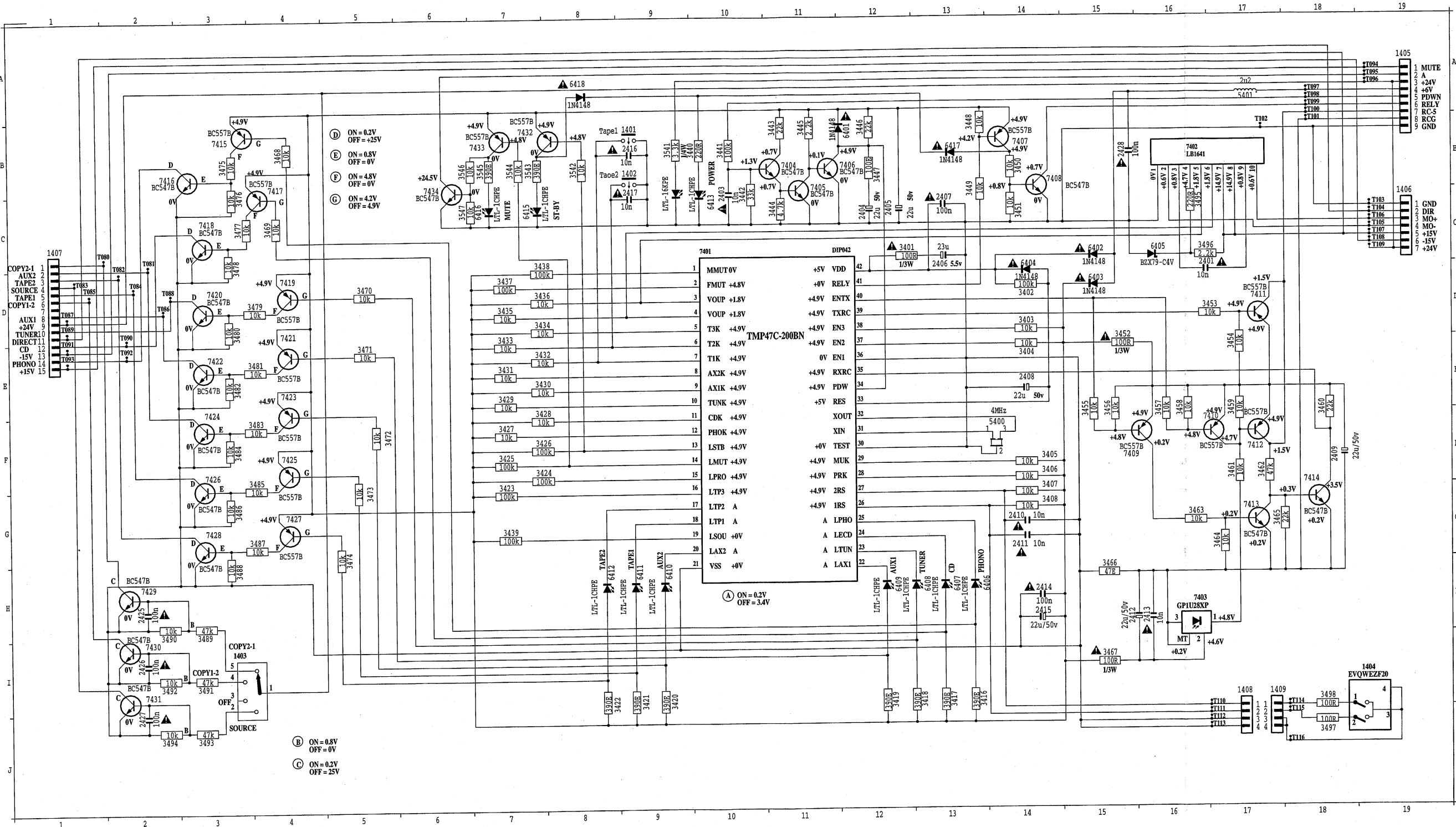


1401	B	3493
1402	B	3494
1403	B	3495
1404	B	3496
1405	B	3497
1406	B	3498
1407	B	3499
1408	B	3500
1409	B	3501
1410	B	3502
1411	B	3503
1412	B	3504
1413	B	3505
1414	B	3506
1415	B	3507
1416	B	3508
1417	B	3509
1418	B	3510
1419	B	3511
1420	B	3512
1421	B	3513
1422	B	3514
1423	B	3515
1424	B	3516
1425	B	3517
1426	B	3518
1427	B	3519
1428	B	3520
1429	B	3521
1430	B	3522
1431	B	3523
1432	B	3524
1433	B	3525
1434	B	3526
1435	B	3527
1436	B	3528
1437	B	3529
1438	B	3530
1439	B	3531
1440	B	3532
1441	B	3533
1442	B	3534
1443	B	3535
1444	B	3536
1445	B	3537
1446	B	3538
1447	B	3539
1448	B	3540
1449	B	3541
1450	B	3542
1451	B	3543
1452	B	3544
1453	B	3545
1454	B	3546
1455	B	3547
1456	B	3548
1457	B	3549
1458	B	3550
1459	B	3551
1460	B	3552
1461	B	3553
1462	B	3554
1463	B	3555
1464	B	3556
1465	B	3557
1466	B	3558
1467	B	3559
1468	B	3560
1469	B	3561
1470	B	3562
1471	B	3563
1472	B	3564
1473	B	3565
1474	B	3566
1475	B	3567
1476	B	3568
1477	B	3569
1478	B	3570
1479	B	3571
1480	B	3572
1481	B	3573
1482	B	3574
1483	B	3575
1484	B	3576
1485	B	3577
1486	B	3578
1487	B	3579
1488	B	3580
1489	B	3581
1490	B	3582
1491	B	3583
1492	B	3584
1493	B	3585
1494	B	3586
1495	B	3587
1496	B	3588
1497	B	3589
1498	B	3590
1499	B	3591
1500	B	3592

ON = 0.8V
OFF = 0V

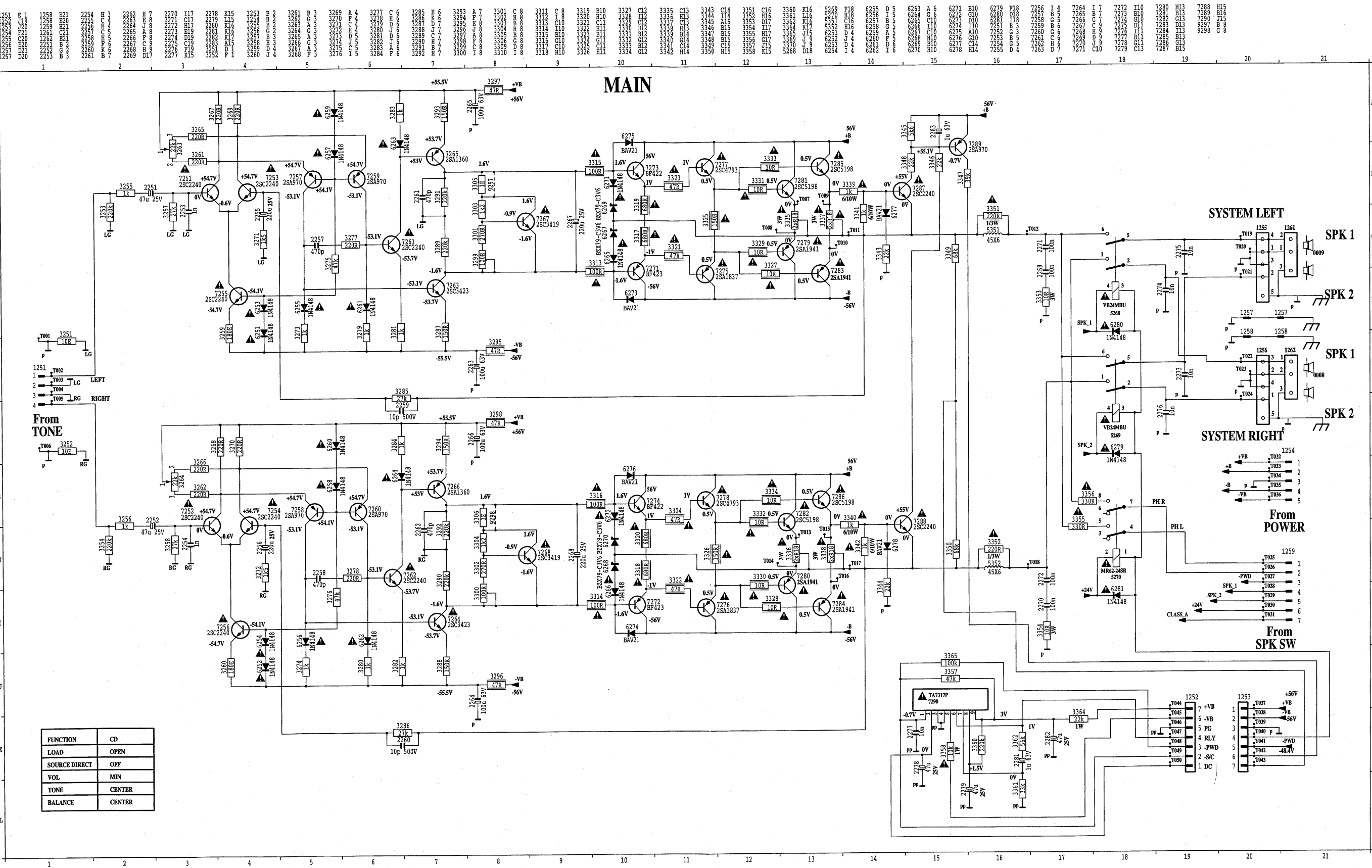
ON = 0.2V
OFF = 25V

CONTROL CIRCUIT I (PM-78)

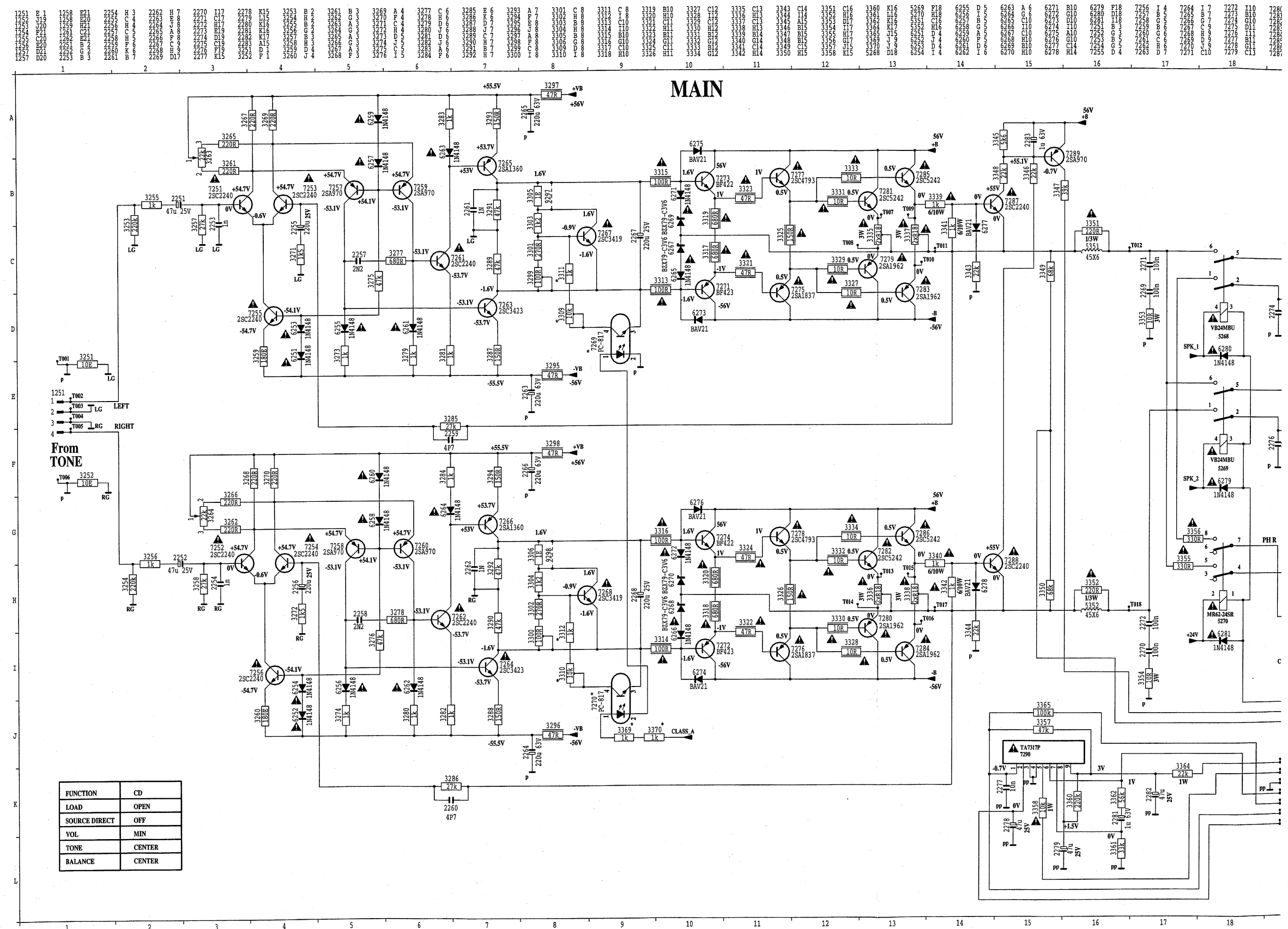


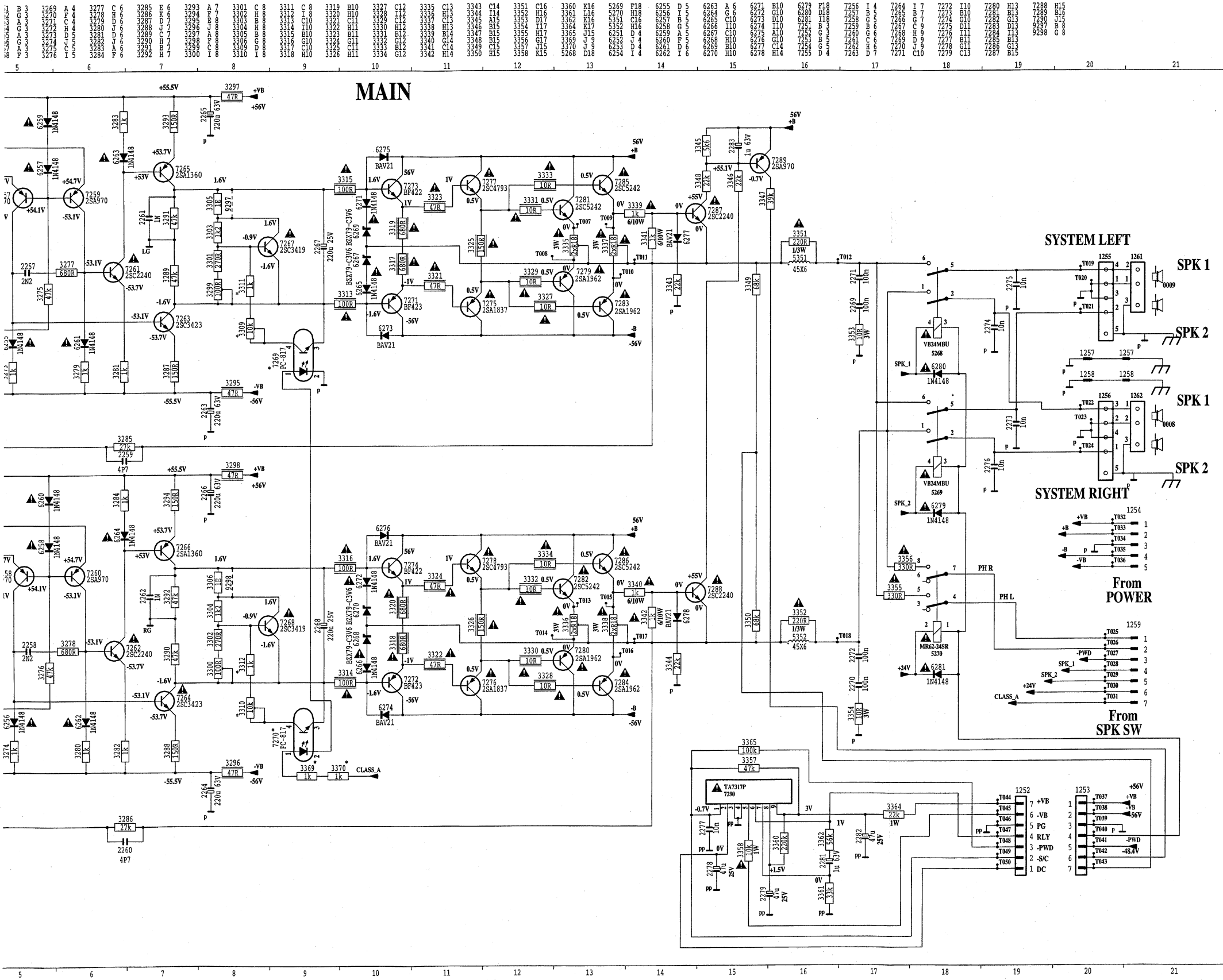
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MAIN CIRCUIT (PM-68)



MAIN CIRCUIT(PM-78)





SYSTEM LEFT

SPK 1

SPK 2

SPK 1

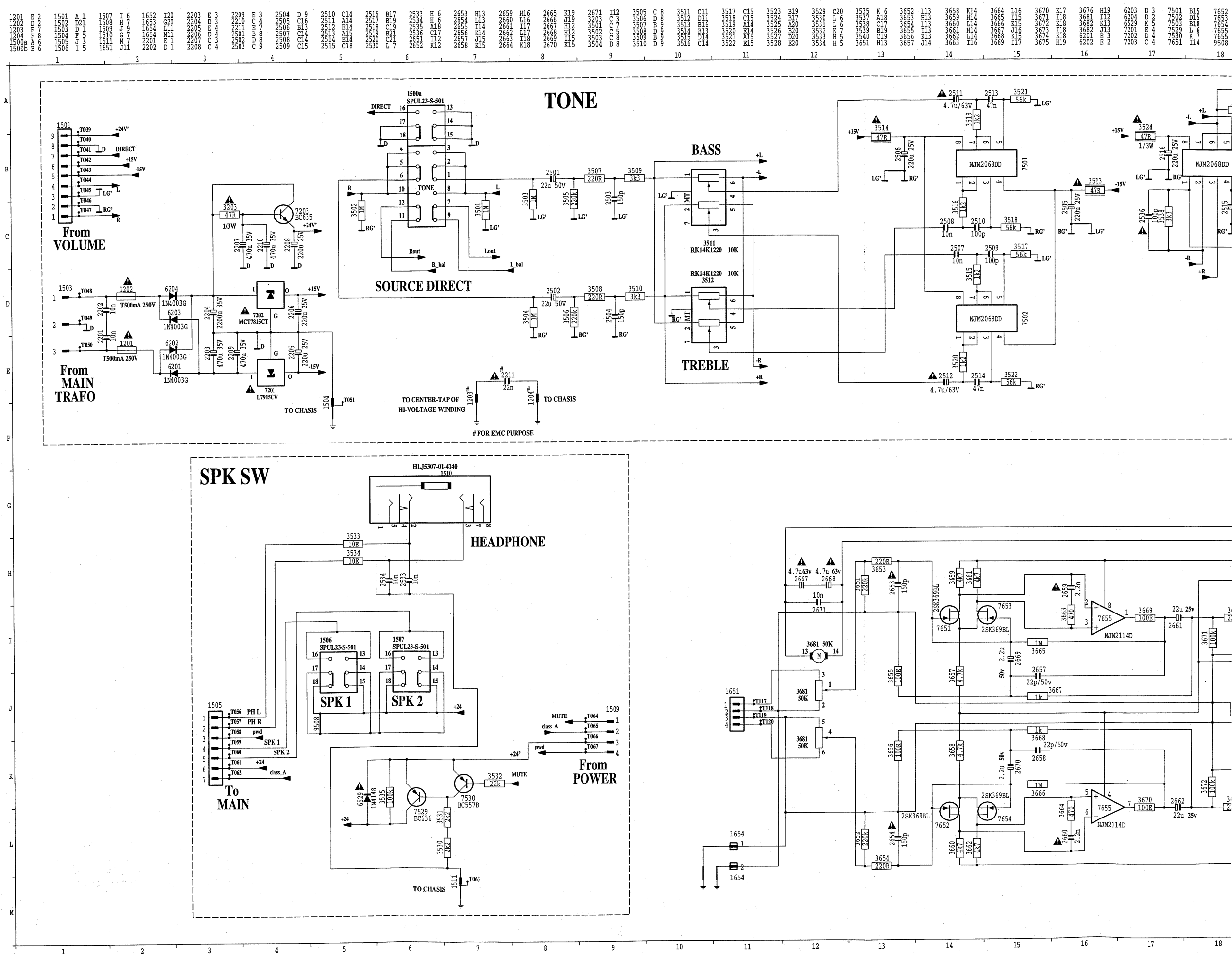
SPK 2

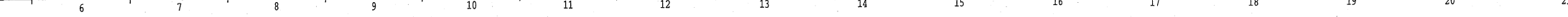
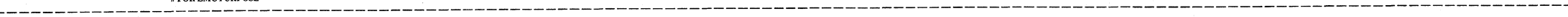
SYSTEM RIGHT

From POWER

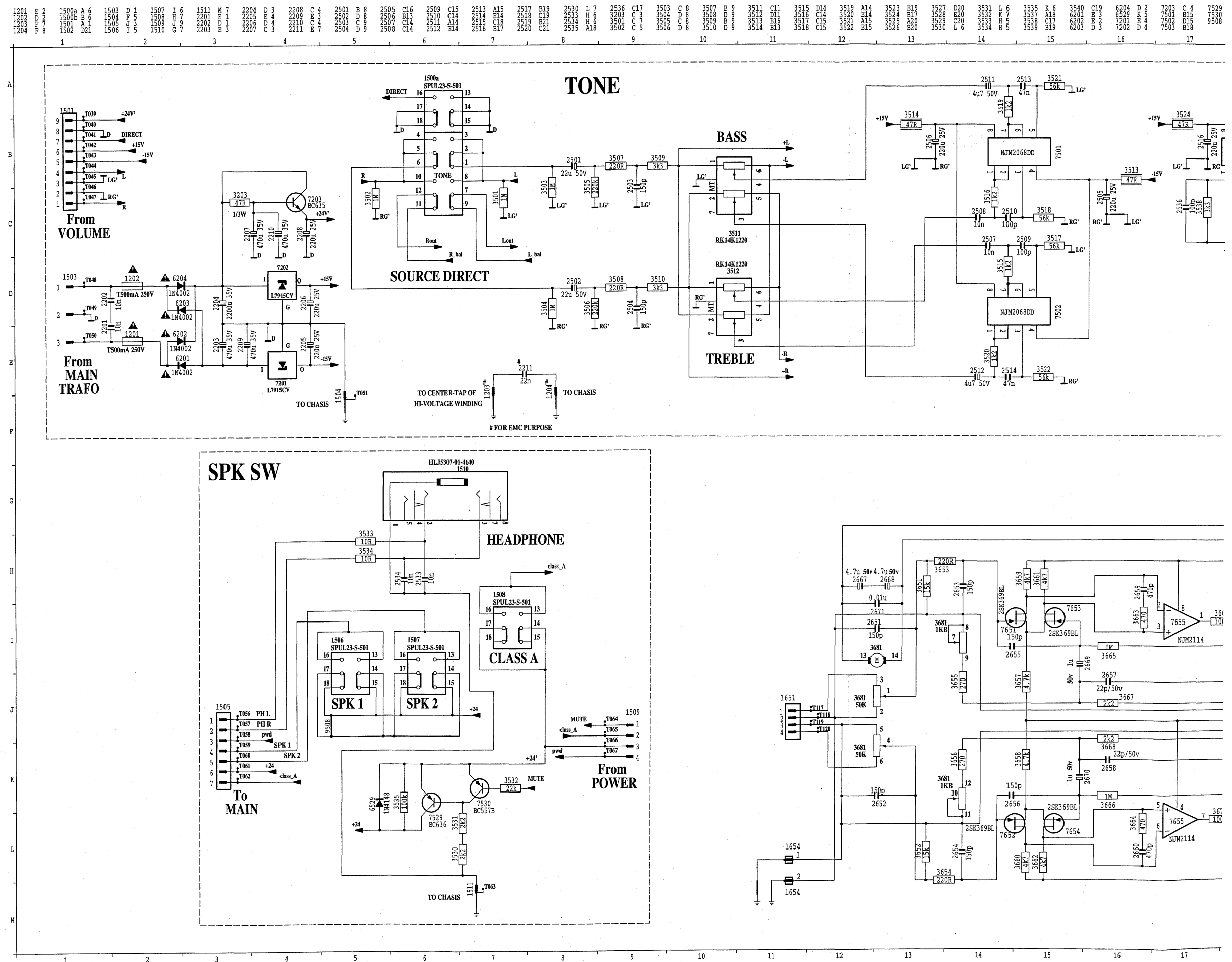
From SPK SW

CONTROL CIRCUIT II (PM-68)

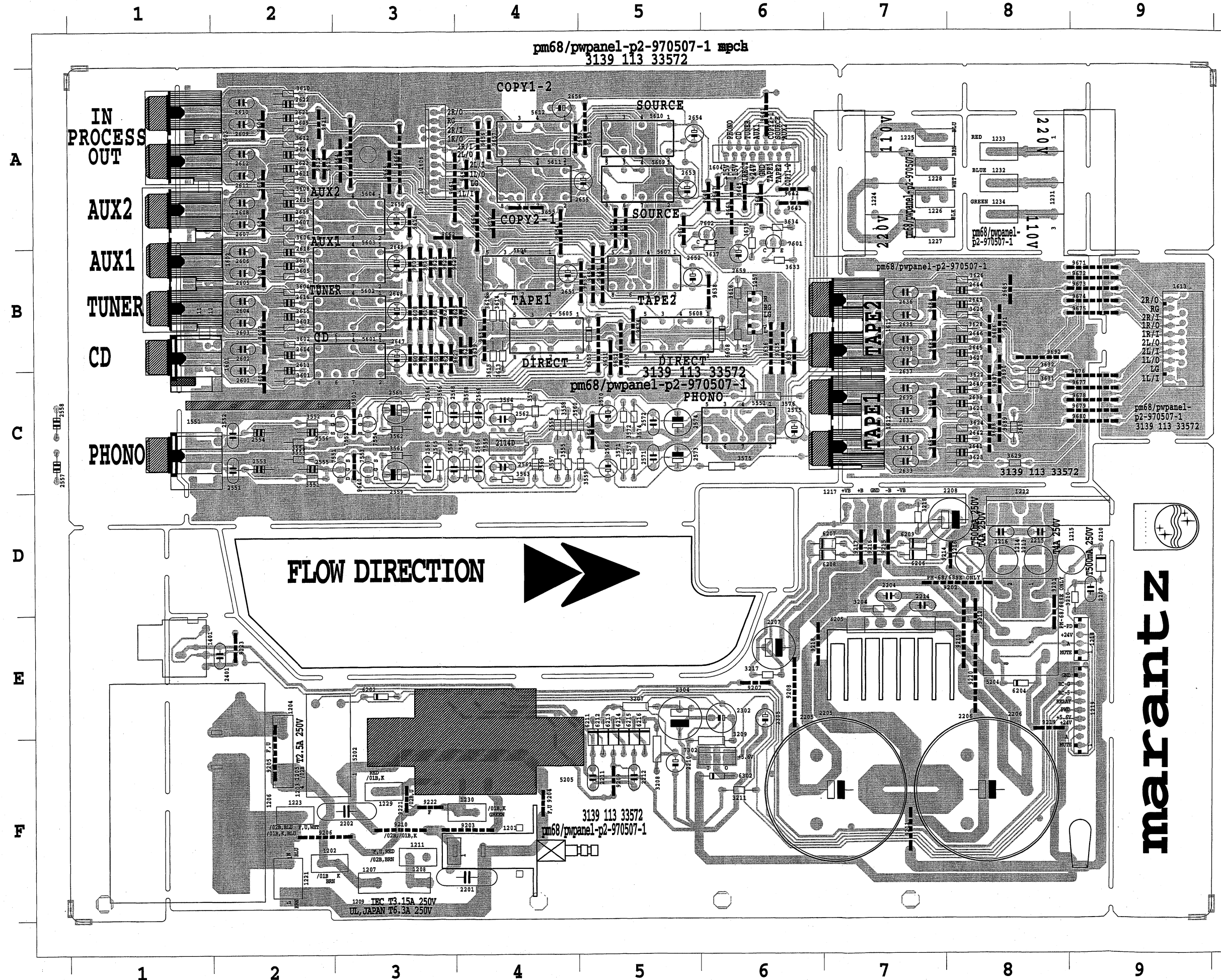


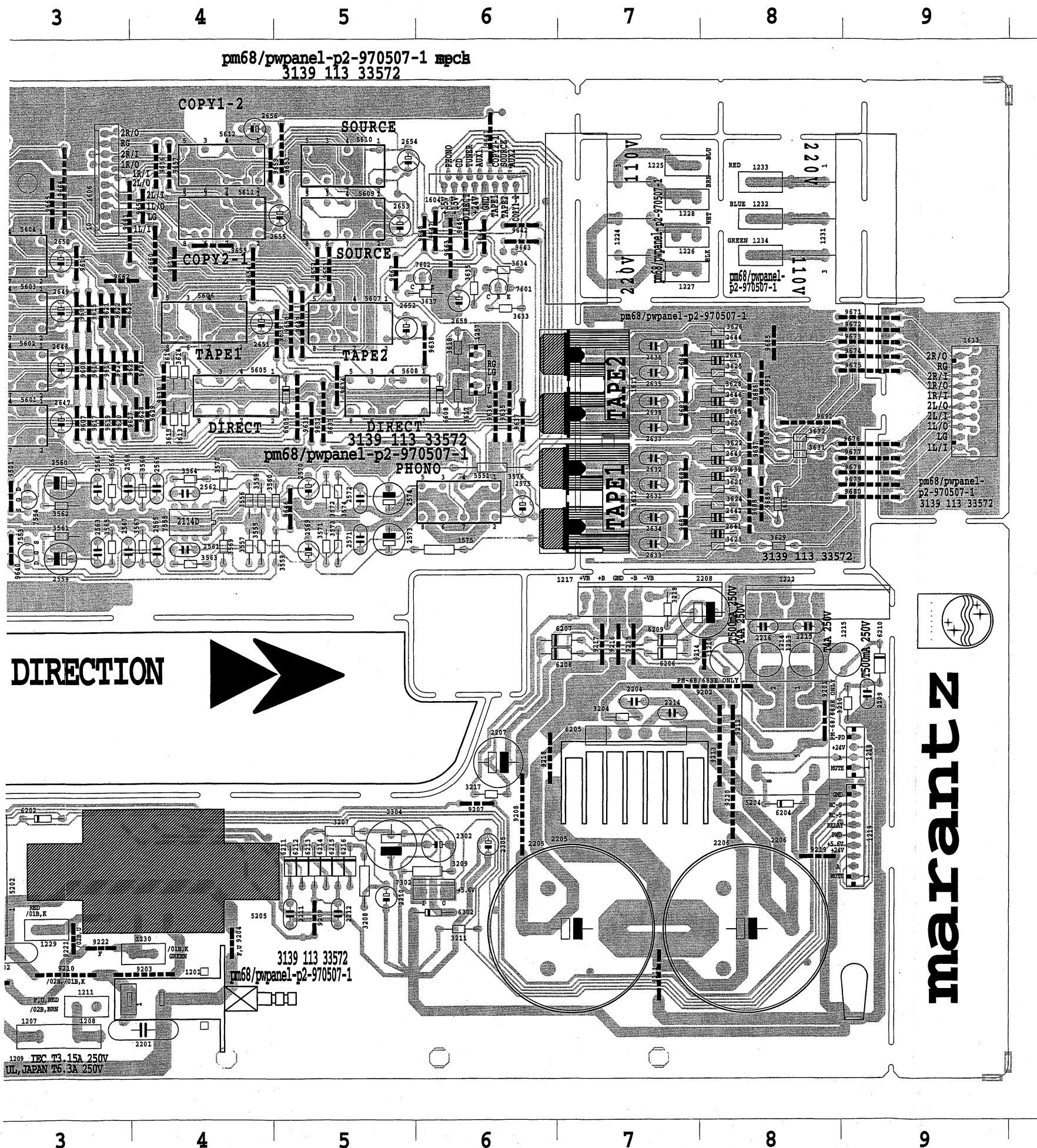


CONTROL CIRCUIT II (PM-78)



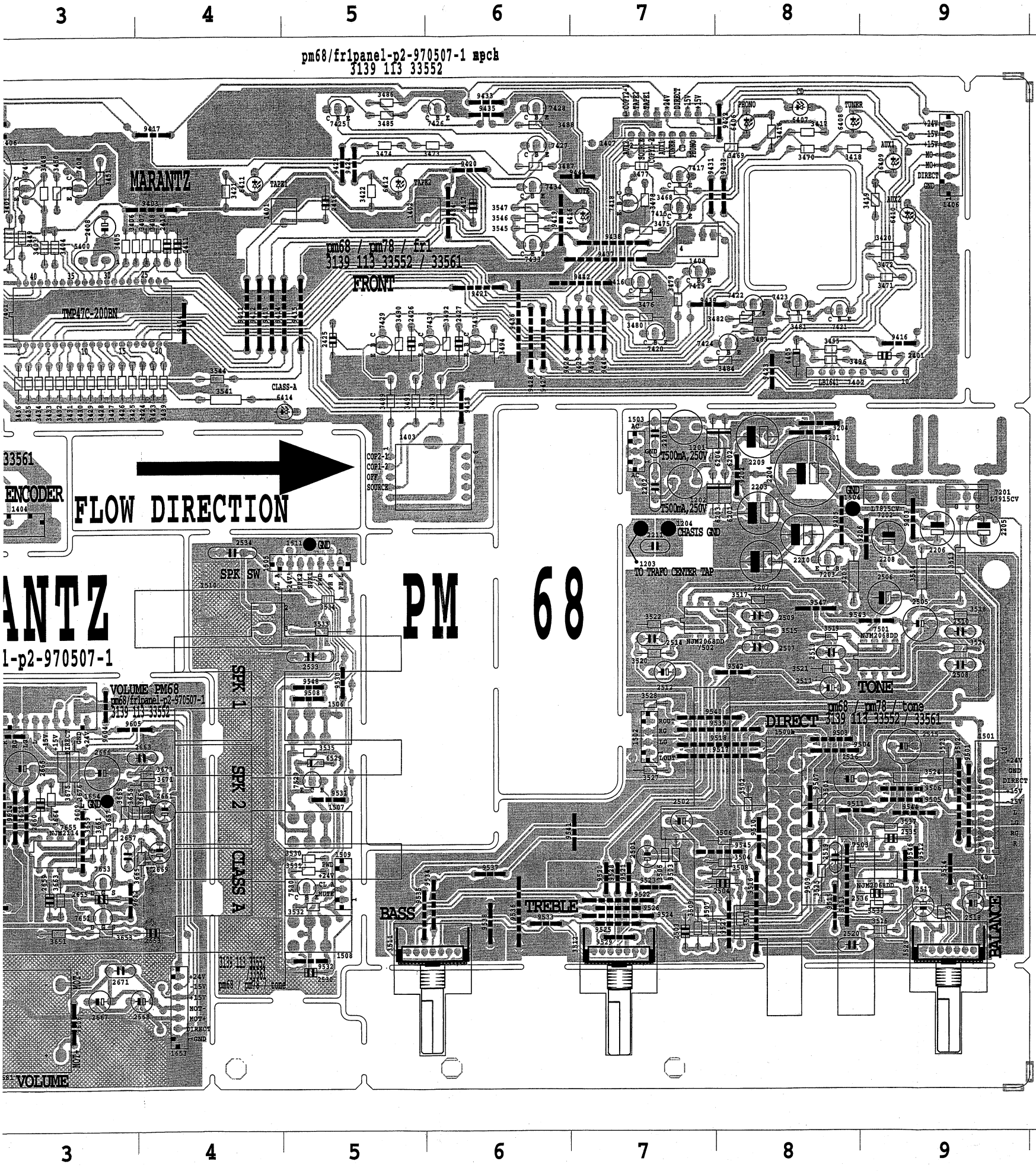
POWER BOARD



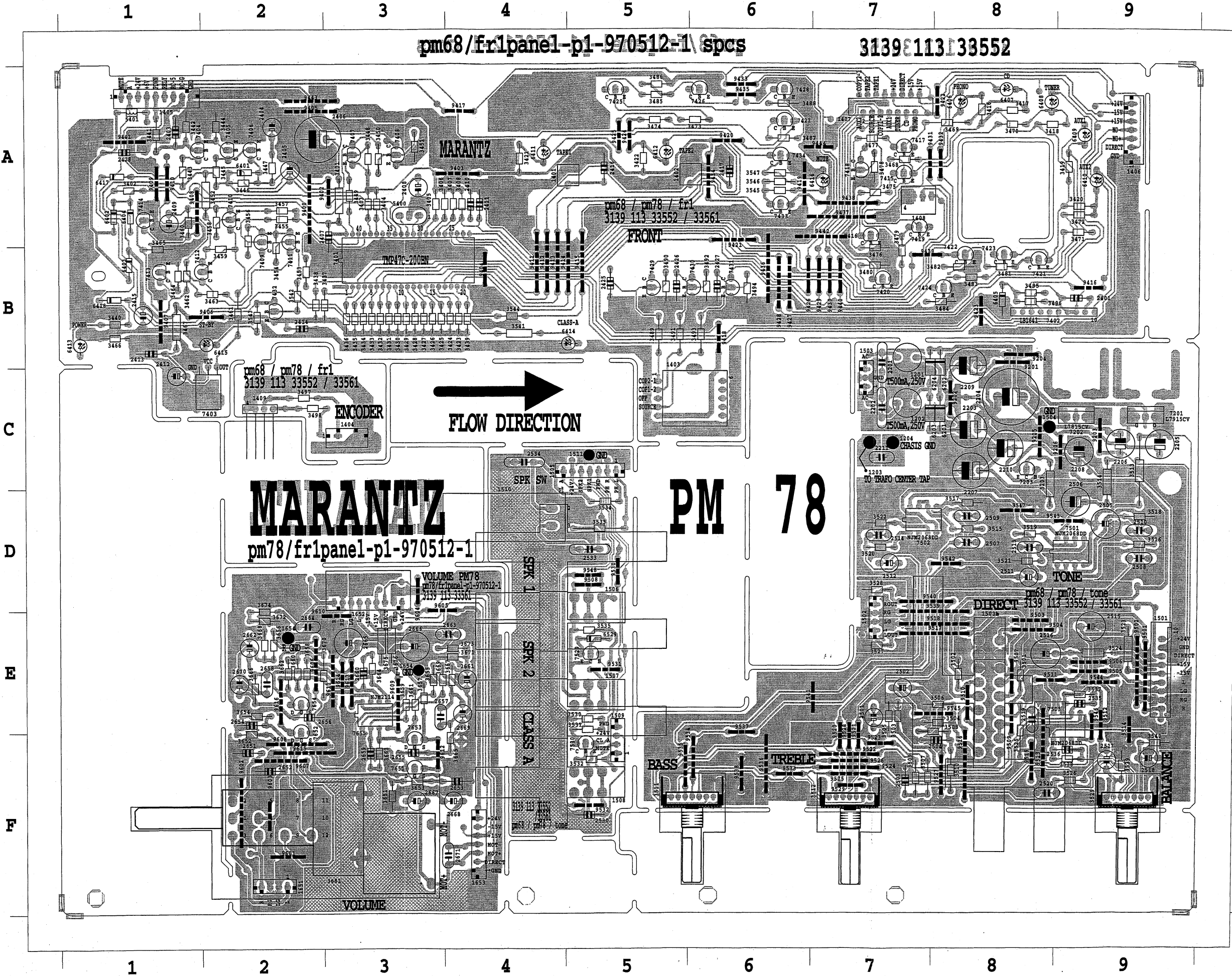


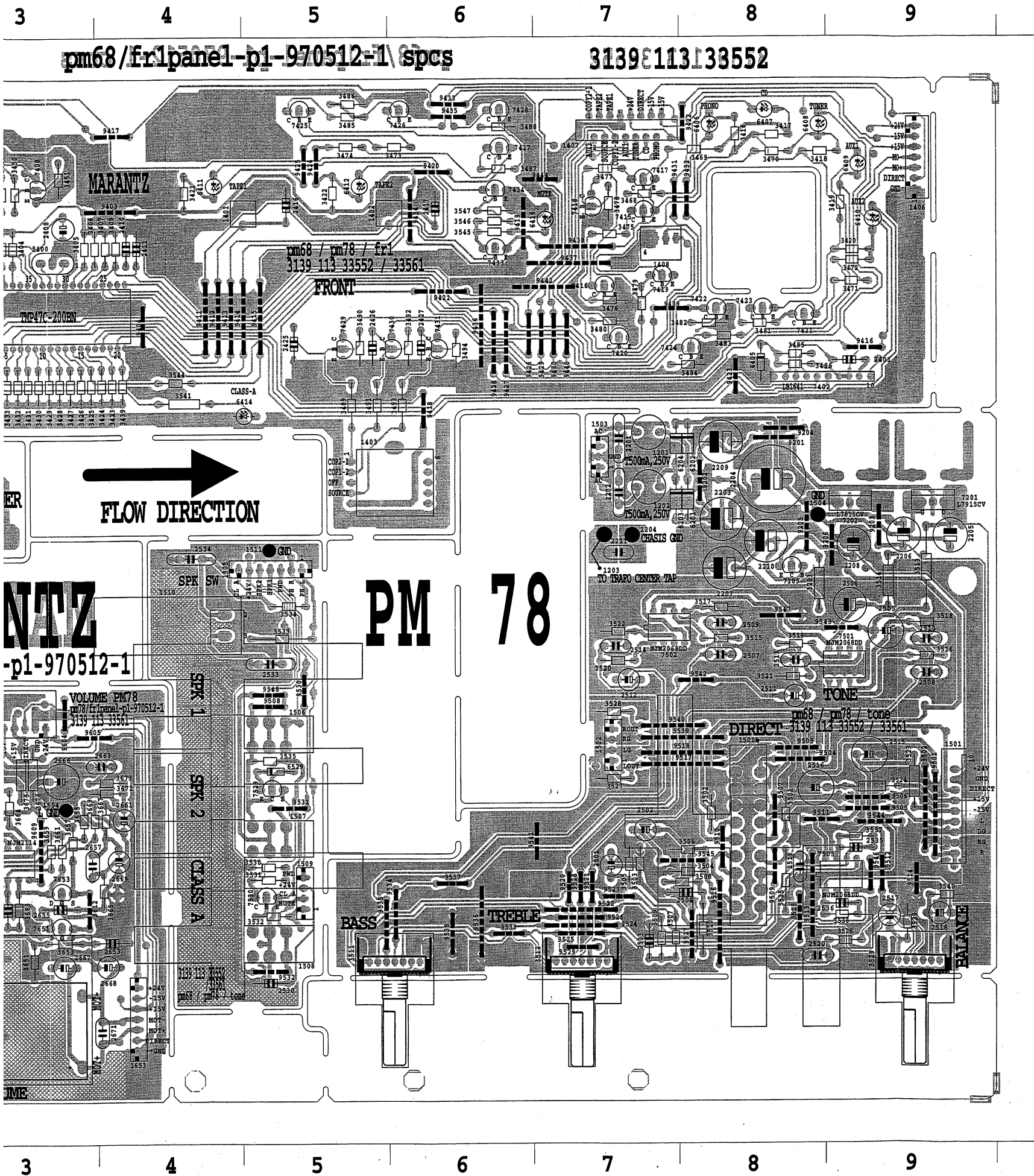
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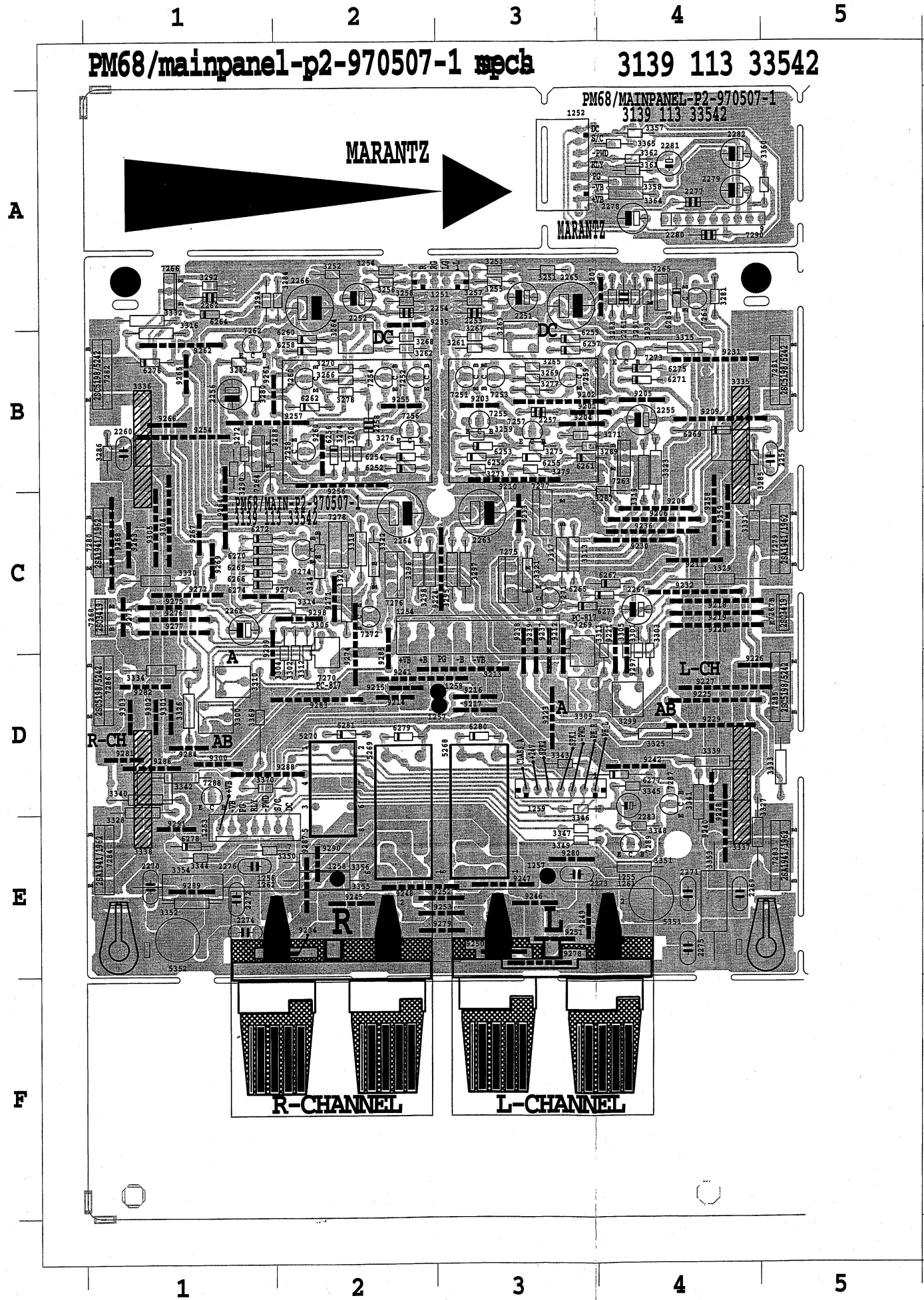


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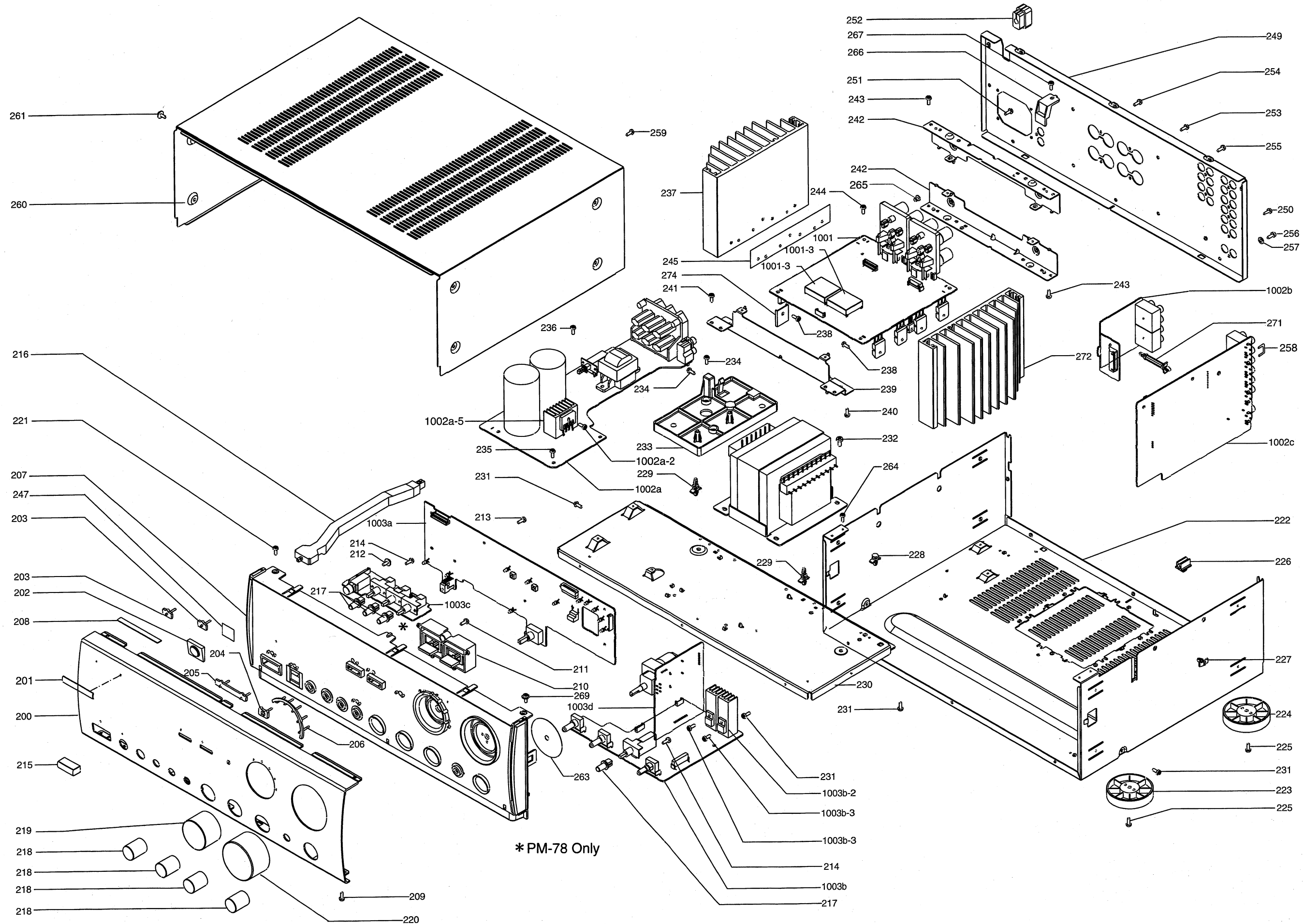
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1253 E 1	3306 C 2	7252 B 2	9258 C 4
1254 C 3	3309 D 3	7253 B 3	9259 C 4
1255 F 3	3310 D 1	7254 B 2	9260 B 2
1256 F 2	3311 D 4	7255 B 3	9261 B 1
1259 D 3	3312 D 2	7256 B 2	9262 B 1
1261 F 3	3313 C 3	7257 B 3	9263 C 1
1262 F 2	3314 C 2	7258 B 2	9264 C 1
2251 A 3	3315 B 4	7259 B 3	9265 B 1
2252 A 2	3316 B 1	7260 B 2	9266 B 1
2253 A 3	3317 C 3	7261 A 4	9267 C 1
2254 A 2	3318 C 2	7262 B 1	9268 C 1
2255 B 4	3319 B 4	7263 B 4	9269 C 1
2256 B 1	3320 C 2	7264 B 1	9270 C 1
2257 B 3	3321 C 3	7265 A 4	9271 C 2
2258 B 2	3322 C 2	7266 A 1	9272 C 1
2259 B 5	3323 B 4	7267 C 5	9273 C 1
2260 B 1	3324 C 2	7268 C 1	9274 C 2
2261 A 4	3325 D 4	7269 D 3	9275 C 1
2262 A 1	3326 D 1	7270 D 2	9276 C 1
2263 C 3	3327 E 4	7271 C 3	9277 C 1
2264 C 2	3328 D 1	7272 C 2	9278 E 3
2265 A 3	3329 C 4	7273 B 4	9279 E 3
2266 A 2	3330 C 1	7274 C 2	9280 E 3
2267 C 4	3331 C 4	7275 C 3	9281 D 1
2268 C 1	3332 A 1	7276 C 2	9282 D 1
2269 E 4	3333 D 5	7277 C 3	9283 D 2
2270 E 1	3334 D 1	7278 C 2	9284 D 1
2271 E 4	3335 B 4	7279 C 5	9285 C 2
2272 E 1	3336 B 1	7280 C 1	9286 D 1
2273 E 3	3337 D 4	7281 B 5	9287 E 2
2274 E 1	3338 D 1	7282 B 1	9288 D 1
2275 E 4	3339 D 4	7283 E 5	9289 E 1
2276 E 1	3340 D 1	7284 E 1	9290 E 2
2277 A 4	3341 D 4	7285 D 5	9291 E 1
2278 A 4	3342 D 1	7286 D 1	9297 D 4
2279 A 4	3343 D 3	7287 D 4	9298 C 2
2280 A 4	3344 E 1	7288 D 1	9299 D 1
2281 A 4	3345 D 4	7289 E 4	9300 D 1
2282 A 4	3346 D 3	7290 A 4	9301 D 1
2283 D 4	3347 E 3	9201 B 3	9302 D 1
3251 A 3	3348 E 4	9202 B 3	9303 D 1
3252 A 2	3349 E 3	9203 B 3	9304 C 1
3253 A 3	3350 E 1	9204 B 3	9305 C 1
3254 A 2	3351 E 4	9205 B 4	----
3255 A 3	3352 E 1	9206 C 4	
3256 A 2	3353 E 4	9207 A 4	
3257 A 3	3354 E 1	9208 C 4	
3258 A 2	3355 E 2	9209 B 4	
3259 B 3	3356 E 2	9210 B 3	
3260 B 2	3357 A 4	9211 C 4	
3261 B 3	3358 A 4	9212 D 3	
3262 B 2	3360 A 5	9213 D 3	
3263 B 3	3361 A 4	9214 D 2	
3264 B 2	3362 A 4	9215 D 2	
3265 B 3	3364 A 4	9216 D 3	
3266 B 2	3365 A 4	9217 D 3	
3267 B 3	3369 D 1	9218 C 4	
3268 B 2	3370 D 1	9219 C 4	
3269 B 3	5268 E 3	9220 C 4	
3270 B 2	5269 E 2	9221 D 4	
3271 B 3	5270 D 2	9223 D 3	
3272 B 1	5351 E 4	9224 C 3	
3273 B 3	5352 E 1	9225 D 4	
3274 B 2	6251 B 3	9226 D 4	
3275 B 3	6252 B 2	9227 D 4	
3276 B 2	6253 B 3	9228 E 4	
3277 B 3	6254 B 2	9229 D 4	
3278 B 2	6255 B 3	9230 C 4	
3279 B 3	6256 B 2	9231 B 4	
3280 B 1	6257 B 3	9232 C 4	
3281 A 4	6258 B 2	9233 C 3	
3282 B 1	6259 B 3	9234 E 2	
3283 A 4	6260 B 2	9235 A 2	
3284 A 2	6261 B 3	9236 C 4	
3285 B 4	6262 B 2	9237 D 3	
3286 B 1	6263 A 4	9238 D 3	
3287 C 4	6264 A 1	9239 D 3	
3288 B 1	6265 C 4	9240 D 4	
3289 B 3	6266 C 1	9241 D 2	
3290 B 1	6267 C 4	9242 D 4	
3291 A 4	6268 C 1	9243 D 3	
3292 A 1	6269 B 4	9244 D 3	
3293 A 4	6270 C 1	9245 E 2	
3294 A 1	6271 B 4	9246 E 3	
3295 C 3	6272 C 1	9247 E 3	
3296 C 2	6273 C 3	9248 E 2	
3297 C 3	6274 C 1	9249 E 3	
3298 C 2	6275 B 4	9250 E 3	
3299 D 4	6276 B 1	9251 E 3	
3300 D 1	6277 D 4	9252 E 3	
3301 D 4	6278 E 1	9253 E 3	
3302 D 2	6279 D 2	9254 B 1	
3303 D 4	6280 D 3	9255 B 2	

7. EXPLODED VIEW AND PARTS LIST

EXPLODED VIEW



(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **EUROPE)

PM-68

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
384		4822 219 10318	RC-HANDSET RC-68PM	QP21910318
▲ 385	/02	4822 321 10809	MAINS CORD 250V 2.5A	QP32110809
▲ 385	F	4822 321 11349	MAINS CORD 125V 12A	QP32111349
▲ 385	U	4822 321 10849	MAINS CORD 125V 10A	QP32110849
387	/02	4822 736 15481	DFU FOR /02	QP73615481
387	F	4822 736 15615	DFU FOR F	QP73615615
387	U	4822 736 15602	DFU FOR U	QP73615602
200	/02B,FB UBL	4822 459 04652	FRONT PANEL BL	214W248010
200	/02G FN	4822 459 04653	FRONT PANEL GL	214W248020
201	/02B,FB UBL	4822 454 11825	MARANTZ BADGE BL	185J251012
201	/02G FN	4822 459 11211	MARANTZ BADGE GL	185J251112
202		4822 450 10372	IR LENS	QP45010372
203		4822 380 10203	LENS STANDBY	QP38010203
204		4822 380 10204	LENS MUTE	QP38010204
205		4822 380 10205	LENS TAPE MONITOR	QP38010205
206		4822 380 10206	LENS FUNCTION	QP38010206
207	/02B,FB UBL	4822 459 04703	FRONT CHASSIS BL	QP45904703
207	/02G FN	4822 459 04705	FRONT CHASSIS GL	QP45904705
210	/02B,FB UBL	4822 410 11261	BUTTON TAPE MONITOR BL	QP41011261
210	/02G FN	4822 410 11262	BUTTON TAPE MONITOR GL	QP41011262
215	/02B,FB UBL	4822 462 72053	POWER BUTTON BL	QP46272053
215	/02G FN	4822 462 72053	POWER BUTTON GL	QP46272053
217	/02B,FB UBL	4822 410 60343	SPK BUTTON BL	058J270030
217	/02G FN	4822 410 11263	SPK BUTTON GL	058J270230
218	/02B,FB UBL	4822 413 41678	TONE KNOB BL	025J154080
218	/02G FN	4822 410 11264	TONE KNOB GL	025J154190
219	/02B,FB UBL	4822 413 41745	SELECTOR KNOB BL	064J154100
219	/02G FN	4822 410 11265	SELECTOR KNOB GL	064J154150
220	/02B,FB UBL	4822 410 10559	VOLUME KNOB BL	063J154080
220	/02G FN	4822 410 11266	VOLUME KNOB GL	063J154190
223		4822 462 42129	LEG FRONT	QP46242129
224		4822 462 42131	LEG REAR	QP46242131
▲ 252		4822 532 60948	MAINS CORD BUSH	QP53260948
1605		4822 323 10406	FLEX CABLE 15P	QP32310406
▲ 5011	/02	4822 146 10823	MAINS TRSF.EI96-60T	QP14610823
▲ 5011	F	4822 146 10859	MAINS TRSF.EI96-60T	QP14610859
▲ 5011	U	4822 146 10854	MAINS TRSF.EI96-60T	QP14610854
	/02B,FB UBL		PACKING CASE (3139 116 37750)	214W801010
	/02G FN		PACKING CASE (3139 116 38460)	214W801020
			CUSHION (3139 116 24990)	232W809010

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **EUROPE)

PM-78

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
384		4822 219 10318	RC-HANDSET RC-68PM	QP21910318
▲ 385	/02	4822 321 10809	MAINS CORD 250V 2.5A	QP32110809
▲ 385	F	4822 321 11349	MAINS CORD 125V 12A	QP32111349
387	/02	4822 736 15481	DFU FOR /02	QP73615481
387	F	4822 736 15615	DFU FOR F	QP73615615
200	/02B,FB	4822 459 04702	FRONT PANEL BL	232W248010
200	/02G FN	4822 459 04704	FRONT PANEL GL	232W248020
201	/02B,FB	4822 454 11825	MARANTZ BADGE BL	185J251012
201	/02G FN	4822 459 11211	MARANTZ BADGE GL	185J251112
202		4822 450 10372	IR LENS	QP45010372
203		4822 380 10203	LENS STANDBY	QP38010203
204		4822 380 10204	LENS MUTE	QP38010204
205		4822 380 10205	LENS TAPE MONITOR	QP38010205
206		4822 380 10206	LENS FUNCTION	QP38010206
207	/02B,FB	4822 459 04703	FRONT CHASSIS BL	QP45904703
207	/02G FN	4822 459 04705	FRONT CHASSIS GL	QP45904705
210	/02B,FB	4822 410 11261	BUTTON TAPE MONITOR BL	QP41011261
210	/02G FN	4822 410 11262	BUTTON TAPE MONITOR GL	QP41011262
215	/02B,FB	4822 462 72053	POWER BUTTON BL	QP46272053
215	/02G FN	4822 462 72053	POWER BUTTON GL	QP46272053
217	/02B,FB	4822 410 60343	SPK BUTTON BL	058J270030
217	/02G FN	4822 410 11263	SPK BUTTON GL	058J270230
218	/02B,FB	4822 413 41678	TONE KNOB BL	025J154080
218	/02G FN	4822 410 11264	TONE KNOB GL	025J154190
219	/02B,FB	4822 413 41745	SELECTOR KNOB BL	064J154100
219	/02G FN	4822 410 11265	SELECTOR KNOB GL	064J154150
220	/02B,FB	4822 410 10559	VOLUME KNOB BL	063J154080
220	/02G FN	4822 410 11266	VOLUME KNOB GL	063J154190
223		4822 462 42129	LEG FRONT	QP46242129
224		4822 462 42131	LEG REAR	QP46242131
▲ 252		4822 532 60948	MAINS CORD BUSH	QP53260948
1605		4822 323 10406	FLEX CABLE 15P	QP32310406
▲ 5011	/02	4822 146 10844	MAINS TRSF.EI96-60T	QP14610844
▲ 5011	F	4822 146 10853	MAINS TRSF.EI96-60T	QP14610853
	/02B,FB		PACKING CASE (3139 116 37770)	232W801010
	/02G FN		PACKING CASE (3139 116 38470)	232W801020
			CUSHION (3139 116 24990)	232W809010

8. IDLING CURRENT AND DC OFFSET VOLTAGE ALIGNMENT

8.1 Quiescent Current Adjustment for Class AB

-Set to CD mode with no input, minimum volume position & mains supply at 230 V \pm 5 %.

-Power up the unit, adjust **SLOWLY** 3299 (L) & 3300 (R) until voltage across L-Channel ----- 3335 (T007 / T006) & 3337 (T009 / T010), R-Channel ----- 3336 (T013 / T014) & 3338 (T015 / T016) is as per the table below.

Time	Voltage
after 30 sec to 1 min*	$\geq 0.3 \text{ mV}$ to $< 0.4 \text{ mV}$

- After 30 min, the voltage should settle down to $18 \text{ mV} \pm 3 \text{ mV}$.

* Start from cold condition.

8.2 Quiescent Current Adjustment for Class A.

- Next, switch to Class A operation. Adjust **SLOWLY** 3309 (L) & 3310 (R) until voltage across L-Channel ----- 3335 (T007 / T006) & 3337 (T009 / T010), R-Channel ----- 3336 (T013 / T014) & 3338 (T015 / T016) is as per the table below.

Time	Voltage
after 0 sec to 30 sec**	$\geq 65 \text{ mV}$ to $< 70 \text{ mV}$

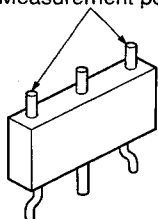
- After 30 min, the voltage should settle down to $90 \text{ mV} \pm 5 \text{ mV}$.

** Continue immediately after 8.1

REMARKS:

- Please take note that for both Class AB & A alignment, at all time during adjustment, refer to the higher reading of each channel.

Quiescent Current
Measurement point



POS.No.
3335
3337
3336
3338

8.3 DC Offset.

- Adjust 3263 and 3264 until DC offset voltage is less than $\pm 10 \text{ mV}$ at Speaker output terminal.

8. アイドリング電流および DC オフセット電圧調整

8.1 アイドリング電流調整 (Class AB)

1) 本体の電源スイッチを入れる前に、ボリュームを最小に、バランス及びトーンコントロールをセンターに合わせます。

2) CD モードにし、電源電圧を 100V にします。

3) セメント抵抗、3335 (T0007 / T0006)、3337 (T0009 / T0010) の L チャンネルと 3336 (T0013 / T0014)、3338 (T0015 / T0016) の R チャンネル各々の電圧が下記の値になるまで、半固定抵抗 3299 (L) と 3300 (R) をゆっくり調整します。

時間	電圧
30 秒 - 1 分 *	0.3mV 以上 0.4mV 以下

30 分後、電圧は $18 \text{ mV} \pm 3 \text{ mV}$ に安定します。

* 冷却状態からスタートします。

8.2 アイドリング電流調整 (Class A)

1) A クラス動作に切り換えます。

2) セメント抵抗 3335 (T0007 / T0006)、3337 (T0009 / T0010) の L チャンネルと 3336 (T0013 / T0014)、3338 (T0015 / T0016) の R チャンネル各々の電圧が下記の値になるまで、半固定抵抗 3309 (L) と 3310 (R) をゆっくり調整します。

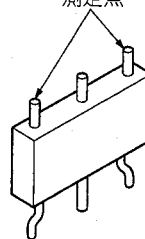
時間	電圧
0 秒 - 30 秒 **	65mV 以上 70mV 以下

30 分後、電圧は $90 \text{ mV} \pm 5 \text{ mV}$ に安定します。

** 切換え後、すぐに行ってください。

注意： A クラス動作及び AB クラス動作のアイドリング電流調整において、同チャンネル内の 2 ケ所の測定点で指示値に差異があった場合は、高い方の電圧値が調整範囲内となるようにします。

アイドリング電流
測定点



POS.No.
3335
3337
3336
3338

8.3 DC オフセット電圧調整

DC オフセット電圧が、スピーカー出力端子で 10 mV 以下になるまで半固定抵抗 3263 と 3264 を調整します。

11. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R*** : 1) GD05 × × × 140, Carbon film fixed resistor, ±5% 1/4W
 R*** : 2) GD05 × × × 160, Carbon film fixed resistor, ±5% 1/6W

① — Resistance value

Examples ;

① Resistance value

0.1Ω ... 001	10Ω ... 100	1kΩ ... 102	100kΩ ... 104
0.5Ω ... 005	18Ω ... 180	2.7kΩ ... 272	680kΩ ... 684
1Ω ... 010	100Ω ... 101	10kΩ ... 103	1MΩ ... 105
6.8Ω ... 068	390Ω ... 391	22kΩ ... 223	4.7MΩ ... 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C*** : CERAMIC CAP.

3) DD1 × × × × 370, Ceramic capacitor
 Disc type
 Temp.coeff.P350 ~ N1000, 50V
 ② — Capacity value
 ③ — Tolerance

Examples ;

② Tolerance (Capacity deviation)

±0.25pF ... 0
 ±0.5pF ... 1
 ±5% ... 5

* Tolerance of COMMON PARTS handled here are as follows :

0.5pF ~ 5pF ... ±0.25pF
 6pF ~ 10pF ... ±0.5pF
 12pF ~ 560pF ... ±5%

③ Capacity value

0.5pF ... 005	3pF ... 030	100pF ... 101
1pF ... 010	10pF ... 100	220pF ... 221
1.5pF ... 015	47pF ... 470	560pF ... 561

C*** : CERAMIC CAP.

4) DK16 × × × 300, High dielectric constant ceramic capacitor
 Disc type
 Temp.chara. 2B4, 50V
 ④ — Capacity value

Examples ;

④ Capacity value

100pF ... 101	1000pF ... 102	10000pF ... 103
470pF ... 471	2200pF ... 222	

C*** : 5) ELECTROLY CAP. ($\frac{\square}{\square}$), 6) FILM CAP. ($\frac{\square}{\square}$)

5) EA × × × × × 10, Electrolytic capacitor
 One-way lead type, Tolerance ±20%
 ⑤ — Capacity value
 ⑥ — Working voltage

Examples ;

⑤ Capacity value

0.1μF ... 104	4.7μF ... 475	100μF ... 107
0.33μF ... 334	10μF ... 106	330μF ... 337
1μF ... 105	22μF ... 226	1100μF ... 118
		2200μF ... 228

⑥ Working voltage

6.3V ... 006	25V ... 025
10V ... 010	35V ... 035
16V ... 016	50V ... 050

6) DF15 × × × 350 — Plastic film capacitor
 DF15 × × × 310 — One-way type, Mylar ±5% 50V
 DF16 × × × 310 — Plastic film capacitor
 One-way type, Mylar ±10% 50V
 ⑦ — Capacity value

Examples ;

⑦ Capacity value

0.001μF (1000pF) ... 102	0.1μF ... 104
0.0018μF ... 182	0.56μF ... 564
0.01μF ... 103	1μF ... 105
0.015μF ... 153	

NOTE : 1) The above CODES (R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.
 2) On the occasion, be confirmed the common parts on the parts list.
 3) Refer to "Common Parts List" for the other common parts (R105, DD4, DK4).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows;

1. KOA Corporation

Part No. (MJI)	Type No. (KOA)	Description
NH05 × × × 140	RF25S × × × × ΩJ	(±5% 1/4W)
NH05 × × × 120	RF50S × × × × ΩJ	(±5% 1/2W)
NH85 × × × 110	RF73B2A × × × × ΩJ	(±5% 1/10W)
NH95 × × × 140	RF73B2E × × × × ΩJ	(±5% 1/4W)

* Resistance value * Resistance value (0.1 – 10kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
NF05 × × × 140	ERD-2FCJ × × ×	(±5% 1/4W)
RF05 × × × 140		
NF02 × × × 140	ERD-2FCG × × ×	(±2% 1/4W)
RF02 × × × 140		

* Resistance value * Resistance value

Examples ;



* Resistance value

0.1Ω ... 001	10Ω ... 100	1kΩ ... 102	100kΩ ... 104
0.5Ω ... 005	18Ω ... 180	2.7kΩ ... 272	680kΩ ... 684
1Ω ... 010	100Ω ... 101	10kΩ ... 103	1MΩ ... 105
6.8Ω ... 068	390Ω ... 391	22kΩ ... 223	4.7MΩ ... 475


ABBREVIATION AND MARKS

ANT. : ANTENNA	BATT. : BATTERY
CAP. : CAPACITOR	CER. : CERAMIC
CONN. : CONNECTING	DIG. : DIGITAL
HP : HEADPHONE	MIC. : MICROPHONE
μ-PRO : MICROPROCESSOR	REC. : RECORDING
RES. : RESISTOR	SPK : SPEAKER
SW : SWITCH	TRANSF. : TRANSFORMER
TRIM. : TRIMMING	TRS. : TRANSISTOR
VAR. : VARIABLE	X'TAL : CRYSTAL

NOTE ON SAFETY :

Symbol  Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

 がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
FUNCTION CIRCUIT BOARD					▲ 3575				
CAPACITORS					▲ 3576				
▲ 2551		4822 126 12147	CER. 22nF ±10% Y5R 25V	QP12612147	3601		4822 052 10479	47Ω ±5% 0.33W	QP05210479
▲ 2552		4822 126 12147	CER. 22nF ±10% Y5R 25V	QP12612147	∫		4822 052 10479	47Ω ±5% 0.33W	QP05210479
2553		4822 122 33519	CER. 470pF ±10% 50V	QP12233519	3618		4822 116 52235	1MΩ ±5% 0.5W	QP11652235
2554		4822 122 33519	CER. 470pF ±10% 50V	QP12233519	3633		4822 116 52235	1MΩ ±5% 0.5W	QP11652235
▲ 2555	/02	4822 122 33169	CER. 680pF ±10% 50V	QP12233169	3634		4822 116 83864	10kΩ ±5% 0.5W	QP11683864
2555	F,U	4822 122 33849	CER. 150pF ±10% Y5P 50V	QP12233849	3635		4822 116 83864	10kΩ ±5% 0.5W	QP11683864
▲ 2556	/02	4822 122 33169	CER. 680pF ±10% 50V	QP12233169	3637		4822 116 83864	10kΩ ±5% 0.5W	QP11683864
2556	F,U	4822 122 33849	CER. 150pF ±10% Y5P 50V	QP12233849	SEMICONDUCTORS				
2559		4822 124 12023	ELECT 47μF ±20% 25V	QP12412023	▲ 6605		4822 130 30621	DIODE 1N4148	QP13030621
2560		4822 124 12023	ELECT 47μF ±20% 25V	QP12412023	▲ 6608		4822 130 30621	DIODE 1N4148	QP13030621
2561		4822 121 70654	FILM 2.2nF ±10% 50V	QP12170654	7551		4822 130 63122	TRS. 2SK369BL	QP13063122
2562		4822 121 70654	FILM 2.2nF ±10% 50V	QP12170654	7552		4822 130 63122	TRS. 2SK369BL	QP13063122
2563		4822 121 51399	FILM 47nF ±10% 50V	QP12151399	7553		4822 130 63122	TRS. 2SK369BL	QP13063122
2564		4822 121 51399	FILM 47nF ±10% 50V	QP12151399	7554		4822 130 63122	TRS. 2SK369BL	QP13063122
2565		4822 121 10685	FILM 1.8nF ±10% 50V	QP12110685	7555		4822 209 31153	IC NJM2114D	QP20931153
2566		4822 121 10685	FILM 1.8nF ±10% 50V	QP12110685	7601		4822 130 44568	TRS. BC557B	QP13044568
2567		4822 121 41935	FILM 12nF ±5% 250V	QP12141935	7602		4822 130 40959	TRS. BC547B	QP13040959
2568		4822 121 41935	FILM 12nF ±5% 250V	QP12141935	MISCELLANEOUS				
2569		4822 124 12024	ELECT 10μF ±20% 16V	QP12412024	1551		4822 265 10311	TERMINAL 2P RCA JACK	QP26510311
2570		4822 124 12024	ELECT 10μF ±20% 16V	QP12412024	1601		4822 265 10311	TERMINAL 2P RCA JACK	QP26510311
2571		4822 121 10696	FILM 4.7nF ±2% 50V	QP12110696	1602	PM-68	4822 267 20453	TERMINAL 6P RCA JACK	QP26720453
2572		4822 121 10696	FILM 4.7nF ±2% 50V	QP12110696	1602	PM-78	4822 265 11061	TERMINAL 6P RCA JACK	QP26511061
2573		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022	1603	PM-68	4822 267 31452	TERMINAL 4P RCA JACK	QP26731452
2574		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022	1603	PM-78	4822 265 30996	TERMINAL 4P RCA JACK	QP26530996
2575		4822 124 40248	ELECT 10μF ±20% 63V	QP12440248	1604		4822 267 50915	CONNECTOR,15P WIRE	QP26750915
▲ 2601					▲ 5551		4822 280 20501	RELAY MR62-24SR	QP28020501
∫		4822 126 12147	CER. 22nF ±10% Y5R 25V	QP12612147	▲ 5601		4822 280 20501	RELAY MR62-24SR	QP28020501
▲ 2612					∫				
2613		4822 122 33849	CER. 150pF ±10% Y5P 50V	QP12233849	▲ 5612				
2624					TAPE IN / OUT				
2647					CIRCUIT BOARD				
∫		4822 124 40248	ELECT 10μF ±20% 63V	QP12440248	CAPACITORS				
2656					▲ 2631				
2659		4822 124 80196	ELECT 47μF ±20% 50V	QP12480196	∫		4822 126 12147	CER. 22nF ±10% Y5R 25V	QP12612147
RESISTORS					▲ 2638				
3551		4822 116 83872	220Ω ±5% 0.5W	QP11683872	2639		4822 122 33849	CER. 150pF ±10% Y5P 50V	QP12233849
3552		4822 116 83872	220Ω ±5% 0.5W	QP11683872	∫				
3553		4822 116 83884	47kΩ ±5% 0.5W	QP11683884	2646				
3554		4822 116 83884	47kΩ ±5% 0.5W	QP11683884	RESISTORS				
3555					3621				
∫		4822 116 52283	4.7kΩ ±5% 0.5W	QP11652283	∫		4822 116 52235	1MΩ ±5% 0.5W	QP11652235
3560					3628				
3561		4822 116 52206	120Ω ±5% 0.5W	QP11652206	3629				
3562		4822 116 52206	120Ω ±5% 0.5W	QP11652206	∫		4822 116 83883	470Ω ±5% 0.5W	QP11683883
3563		4822 116 52175	100Ω ±5% 0.5W	QP11652175	3632				
3564		4822 116 52175	100Ω ±5% 0.5W	QP11652175	MISCELLANEOUS				
3565		4822 116 52234	100kΩ ±5% 0.5W	QP11652234	1611	PM-68	4822 267 31452	TERMINAL 4P RCA JACK	QP26731452
3566		4822 116 52234	100kΩ ±5% 0.5W	QP11652234	1611	PM-78	4822 265 30996	TERMINAL 4P RCA JACK	QP26530996
3567		4822 116 52289	5.6kΩ ±5% 0.5W	QP11652289	1612	PM-68	4822 267 31452	TERMINAL 4P RCA JACK	QP26731452
3568		4822 116 52289	5.6kΩ ±5% 0.5W	QP11652289	1612	PM-78	4822 265 30996	TERMINAL 4P RCA JACK	QP26530996
3569		4822 116 52175	100Ω ±5% 0.5W	QP11652175	VOLUME CIRCUIT BOARD				
3570		4822 116 52175	100Ω ±5% 0.5W	QP11652175	CAPACITORS				
3571		4822 116 52234	100kΩ ±5% 0.5W	QP11652234	▲ 2653		4822 122 33195	CER. 100pF ±10% 50V	QP12233195
3572		4822 116 52234	100kΩ ±5% 0.5W	QP11652234	▲ 2654		4822 122 33195	CER. 100pF ±10% 50V	QP12233195
3573		4822 116 83872	220Ω ±5% 0.5W	QP11683872					
3574		4822 116 83872	220Ω ±5% 0.5W	QP11683872					

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJ)	POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJ)
2657		4822 126 11948	CER. 22pF $\pm 5\%$ 50V	QP12611948	▲ 2407		4822 126 12882	CER. 100nF+80% -20% 50V	QP12612882
2658		4822 126 11948	CER. 22pF $\pm 5\%$ 50V	QP12611948	2408		4822 124 81151	ELECT 22 μ F 50V	QP12481151
▲ 2659		4822 126 12339	CER. 2.2nF $\pm 10\%$ Y5R	QP12612339	2409		4822 124 81151	ELECT 22 μ F 50V	QP12481151
▲ 2660		4822 126 12339	CER. 2.2nF $\pm 10\%$ Y5R	QP12612339	▲ 2410		4822 121 51387	FILM 10nF $\pm 20\%$ 16V	QP12151387
2661		4822 124 12026	ELECT 22 μ F $\pm 20\%$ 25V	QP12412026	▲ 2411		4822 121 51387	FILM 10nF $\pm 20\%$ 16V	QP12151387
2662		4822 124 12026	ELECT 22 μ F $\pm 20\%$ 25V	QP12412026	2412		4822 124 81151	ELECT 22 μ F 50V	QP12481151
2663		4822 121 10686	FILM 4.7nF $\pm 10\%$ 50V	QP12110686	▲ 2413		4822 121 51387	FILM 10nF $\pm 20\%$ 16V	QP12151387
2664		4822 121 10686	FILM 4.7nF $\pm 10\%$ 50V	QP12110686	▲ 2414		4822 126 12882	CER. 100nF+80% -20% 50V	QP12612882
2665		4822 124 12022	ELECT 220 μ F $\pm 20\%$ 25V	QP12412022	2415		4822 124 81151	ELECT 22 μ F 50V	QP12481151
2666		4822 124 12022	ELECT 220 μ F $\pm 20\%$ 25V	QP12412022	▲ 2416		4822 121 51387	FILM 10nF $\pm 20\%$ 16V	QP12151387
▲ 2667		4822 124 40246	ELECT 4.7 μ F $\pm 20\%$ 63V	QP12440246	▲ 2417		4822 121 51387	FILM 10nF $\pm 20\%$ 16V	QP12151387
▲ 2668		4822 124 40246	ELECT 4.7 μ F $\pm 20\%$ 63V	QP12440246	▲ 2425				
2669		4822 124 12027	ELECT 2.2 μ F $\pm 20\%$ 50V	QP12412027	▲ 2428		4822 126 12882	CER. 100nF+80% -20% 50V	QP12612882
2670		4822 124 12027	ELECT 2.2 μ F $\pm 20\%$ 50V	QP12412027					
2671		4822 124 80141	ELECT 10nF $\pm 10\%$ 50V	QP12480141					
			RESISTORS		▲ 3401		4822 052 10101	100 Ω $\pm 5\%$ 0.33W	QP05210101
3651	PM-68	4822 116 83874	220k Ω $\pm 5\%$ 0.5W	QP11683874	3402		4822 116 52234	100k Ω $\pm 5\%$ 0.5W	QP11652234
3651	PM-78	4822 116 52244	15k Ω $\pm 5\%$ 0.5W	QP11652244	3403				
3652	PM-68	4822 116 83874	220k Ω $\pm 5\%$ 0.5W	QP11683874	3407		4822 116 83864	10k Ω $\pm 5\%$ 0.5W	QP11683864
3652	PM-78	4822 116 52244	15k Ω $\pm 5\%$ 0.5W	QP11652244	3408		4822 116 83864	10k Ω $\pm 5\%$ 0.5W	QP11683864
3653		4822 050 11002	1k Ω $\pm 1\%$ 0.4W	QP05011002	3416		4822 116 52222	390 Ω $\pm 5\%$ 0.5W	QP11652222
3654		4822 050 11002	1k Ω $\pm 1\%$ 0.4W	QP05011002	3422				
3655	PM-68	4822 116 52206	120 Ω $\pm 5\%$ 0.5W	QP11652206	3423		4822 116 52234	100k Ω $\pm 5\%$ 0.5W	QP11652234
3655	PM-78	4822 116 83876	270 Ω $\pm 5\%$ 0.5W	QP11683876	3426				
3656	PM-68	4822 116 52206	120 Ω $\pm 5\%$ 0.5W	QP11652206	3427				
3656	PM-78	4822 116 83876	270 Ω $\pm 5\%$ 0.5W	QP11683876	3436		4822 116 83864	10k Ω $\pm 5\%$ 0.5W	QP11683864
3657					3437		4822 116 52234	100k Ω $\pm 5\%$ 0.5W	QP11652234
3662		4822 116 52283	4.7k Ω $\pm 5\%$ 0.5W	QP11652283	3438		4822 116 52234	100k Ω $\pm 5\%$ 0.5W	QP11652234
3663		4822 116 83872	220 Ω $\pm 5\%$ 0.5W	QP11683872	3439		4822 116 52234	100k Ω $\pm 5\%$ 0.5W	QP11652234
3664		4822 116 83872	220 Ω $\pm 5\%$ 0.5W	QP11683872	3440		4822 116 83872	220 Ω $\pm 5\%$ 0.5W	QP11683872
3665		4822 116 52235	1M Ω $\pm 5\%$ 0.5W	QP11652235	3441		4822 116 52234	100k Ω $\pm 5\%$ 0.5W	QP11652234
3666		4822 116 52235	1M Ω $\pm 5\%$ 0.5W	QP11652235	3442		4822 116 52271	33k Ω $\pm 5\%$ 0.5W	QP11652271
3667	PM-68	4822 050 11002	1k Ω $\pm 1\%$ 0.4W	QP05011002	3443		4822 116 52257	22k Ω $\pm 5\%$ 0.5W	QP11652257
3667	PM-78	4822 116 52256	2.2k Ω $\pm 5\%$ 0.5W	QP11652256	3444		4822 116 52283	4.7k Ω $\pm 5\%$ 0.5W	QP11652283
3668	PM-68	4822 050 11002	1k Ω $\pm 1\%$ 0.4W	QP05011002	3445		4822 116 52256	2.2k Ω $\pm 5\%$ 0.5W	QP11652256
3668	PM-78	4822 116 52256	2.2k Ω $\pm 5\%$ 0.5W	QP11652256	3446		4822 116 52257	22k Ω $\pm 5\%$ 0.5W	QP11652257
3669		4822 116 52175	100 Ω $\pm 5\%$ 0.5W	QP11652175	3447		4822 116 52175	100 Ω $\pm 5\%$ 0.5W	QP11652175
3670		4822 116 52175	100 Ω $\pm 5\%$ 0.5W	QP11652175	3448				
3671		4822 116 52234	100k Ω $\pm 5\%$ 0.5W	QP11652234	3451		4822 116 83864	10k Ω $\pm 5\%$ 0.5W	QP11683864
3672		4822 116 52234	100k Ω $\pm 5\%$ 0.5W	QP11652234	3452		4822 052 10101	100 Ω $\pm 5\%$ 0.33W	QP05210101
3673		4822 116 83872	220 Ω $\pm 5\%$ 0.5W	QP11683872	3453				
3674		4822 116 83872	220 Ω $\pm 5\%$ 0.5W	QP11683872	3459		4822 116 83864	10k Ω $\pm 5\%$ 0.5W	QP11683864
▲ 3675		4822 052 10479	47 Ω $\pm 5\%$ 0.33W	QP05210479	3460		4822 116 52257	22k Ω $\pm 5\%$ 0.5W	QP11652257
▲ 3676		4822 052 10479	47 Ω $\pm 5\%$ 0.33W	QP05210479	3461		4822 116 83864	10k Ω $\pm 5\%$ 0.5W	QP11683864
3681	PM-68	4822 101 11789	VARIABLE 50k Ω	QP10111789	3462		4822 116 83884	47k Ω $\pm 5\%$ 0.5W	QP11683884
3681	PM-78	4822 101 11803	VARIABLE 50k Ω	QP10111803	3463		4822 116 83864	10k Ω $\pm 5\%$ 0.5W	QP11683864
			SEMICONDUCTORS		3464		4822 116 83864	10k Ω $\pm 5\%$ 0.5W	QP11683864
7651					3465		4822 116 52257	22k Ω $\pm 5\%$ 0.5W	QP11652257
7654		4822 130 63122	TRS. 2SK369BL	QP13063122	3466		4822 116 52195	47 Ω $\pm 5\%$ 0.5W	QP11652195
7655		4822 209 31153	IC NJM2114D	QP20931153	▲ 3467		4822 052 10101	100 Ω $\pm 5\%$ 0.33W	QP05210101
			FRONT CIRCUIT BOARD		3468				
			CAPACITORS		3488		4822 116 83864	10k Ω $\pm 5\%$ 0.5W	QP11683864
▲ 2401		4822 121 51387	FILM 10nF $\pm 20\%$ 16V	QP12151387	3489		4822 116 83884	47k Ω $\pm 5\%$ 0.5W	QP11683884
▲ 2403		4822 121 51387	FILM 10nF $\pm 20\%$ 16V	QP12151387	3490		4822 116 83864	10k Ω $\pm 5\%$ 0.5W	QP11683864
2404		4822 124 81151	ELECT 22 μ F 50V	QP12481151	3491		4822 116 83884	47k Ω $\pm 5\%$ 0.5W	QP11683884
2405		4822 124 81151	ELECT 22 μ F 50V	QP12481151					
2406		4822 124 80818	ELECT 22000 μ F 5.5V	QP12480818					

POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJJ)	POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJJ)
3492	PM-78	4822 116 83864	10kΩ ±5% 0.5W	QP11683864	1403		4822 273 10336	ROTARY SWITCH REC.	QP27310336
3493		4822 116 83884	47kΩ ±5% 0.5W	QP11683884	1407		4822 267 51322	CONNECTOR 15P WIRE	QP26751322
3494		4822 116 83864	10kΩ ±5% 0.5W	QP11683864	5400		4822 242 72527	CER.RESONATOR 4.00MHz	QP24272527
3495		4822 116 83872	220Ω ±5% 0.5W	QP11683872	5401		4822 156 21721	COIL 2.2μH ±10%	QP15621721
3496		4822 116 52256	2.2kΩ ±5% 0.5W	QP11652256					
▲ 3541		4822 053 10332	3.3kΩ ±5% 1W	QP05310332				ENCODER CIRCUIT BOARD	
3542		4822 116 83864	10kΩ ±5% 0.5W	QP11683864					
3543		4822 116 52222	390Ω ±5% 0.5W	QP11652222				RESISTORS	
3544		4822 116 83864	10kΩ ±5% 0.5W	QP11683864	3497		4822 116 52175	100Ω ±5% 0.5W	QP11652175
3545		4822 116 52222	390Ω ±5% 0.5W	QP11652222	3498		4822 116 52175	100Ω ±5% 0.5W	QP11652175
3546		4822 116 83864	10kΩ ±5% 0.5W	QP11683864				MISCELLANEOUS	
3547		4822 116 83864	10kΩ ±5% 0.5W	QP11683864	1404		4822 273 10237	ROTARY SWITCH SOURCE	QP27310237
▲ 6401	PM-78		SEMICONDUCTORS					TONE CIRCUIT BOARD	
∫		4822 130 30621	DIODE 1N4148	QP13030621				CAPACITORS	
▲ 6404					2201		4822 124 80141	ELECT 10nF ±10% 50V	QP12480141
6405		4822 130 34174	DIODE BZX79-B4V7	QP13034174	2202		4822 124 80141	ELECT 10nF ±10% 50V	QP12480141
6406					2203		4822 124 12025	ELECT 470μF ±20% 35V	QP12412025
∫		4822 130 10792	LED LTL-1CHPE	QP13010792	2204		4822 124 41329	ELECT 2200μF ±20% 35V	QP12441329
6413					2205		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022
6414		4822 130 10792	LED LTL-1CHPE	QP13010792	2206		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022
6415		4822 130 10792	LED LTL-1CHPE	QP13010792	2207		4822 124 12025	ELECT 470μF ±20% 35V	QP12412025
6416		4822 130 10792	LED LTL-1CHPE	QP13010792	2208		4822 124 40257	ELECT 220μF ±20% 63V	QP12440257
▲ 6417		4822 130 30621	DIODE 1N4148	QP13030621	2209		4822 124 12025	ELECT 470μF ±20% 35V	QP12412025
▲ 6418		4822 130 30621	DIODE 1N4148	QP13030621	2210		4822 124 12025	ELECT 470μF ±20% 35V	QP12412025
7401		4822 209 15719	μ-PRO TMP47C200BN-G929	QP20915719	▲ 2211		4822 126 12147	CER. 22nF ±10% Y5R 25V	QP12612147
7402		4822 209 30193	IC LB1641	QP20930193	2501		4822 124 81151	ELECT 22μF 50V	QP12481151
7403		4822 130 10165	IR-EYE GP1U28XP	QP13010165	2502		4822 124 81151	ELECT 22μF 50V	QP12481151
7404		4822 130 40959	TRS. BC547B	QP13040959	2503		4822 122 33849	CER. 150pF ±10% Y5P 50V	QP12233849
7405		4822 130 40959	TRS. BC547B	QP13040959	2504		4822 122 33849	CER. 150pF ±10% Y5P 50V	QP12233849
7406		4822 130 40959	TRS. BC547B	QP13040959	2505		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022
7407		4822 130 44568	TRS. BC557B	QP13044568	2506		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022
7408		4822 130 40959	TRS. BC547B	QP13040959	2507		4822 121 41857	FILM 10nF ±5% 250V	QP12141857
7409					2508		4822 121 41857	FILM 10nF ±5% 250V	QP12141857
∫		4822 130 44568	TRS. BC557B	QP13044568	2509		4822 126 10777	CER. 100pF 50V	QP12610777
7412					2510		4822 126 10777	CER. 100pF 50V	QP12610777
7413		4822 130 40959	TRS. BC547B	QP13040959	▲ 2511		4822 124 40246	ELECT 4.7μF ±20% 63V	QP12440246
7414		4822 130 40959	TRS. BC547B	QP13040959	▲ 2512		4822 124 40246	ELECT 4.7μF ±20% 63V	QP12440246
7415		4822 130 44568	TRS. BC557B	QP13044568	2513		4822 121 51399	FILM 47nF ±10% 50V	QP12151399
7416		4822 130 40959	TRS. BC547B	QP13040959	2514		4822 121 51399	FILM 47nF ±10% 50V	QP12151399
7417		4822 130 44568	TRS. BC557B	QP13044568	2515		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022
7418		4822 130 40959	TRS. BC547B	QP13040959	2516		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022
7419		4822 130 44568	TRS. BC557B	QP13044568	2517		4822 124 40244	ELECT 2.2μF ±20% 63V	QP12440244
7420		4822 130 40959	TRS. BC547B	QP13040959	2518		4822 124 40244	ELECT 2.2μF ±20% 63V	QP12440244
7421		4822 130 44568	TRS. BC557B	QP13044568	2519		4822 121 10686	FILM 4.7nF ±10% 50V	QP12110686
7422		4822 130 40959	TRS. BC547B	QP13040959	2520		4822 121 10686	FILM 4.7nF ±10% 50V	QP12110686
7423		4822 130 44568	TRS. BC557B	QP13044568	▲ 2535		4822 122 33195	CER. 100pF ±10% 50V	QP12233195
7424		4822 130 40959	TRS. BC547B	QP13040959	▲ 2536		4822 122 33195	CER. 100pF ±10% 50V	QP12233195
7425		4822 130 44568	TRS. BC557B	QP13044568				RESISTORS	
7426		4822 130 40959	TRS. BC547B	QP13040959	▲ 3203		4822 052 10479	47Ω ±5% 0.33W	QP05210479
7427		4822 130 44568	TRS. BC557B	QP13044568	3501		4822 116 52235	1MΩ ±5% 0.5W	QP11652235
7428					3502		4822 116 52235	1MΩ ±5% 0.5W	QP11652235
∫		4822 130 40959	TRS. BC547B	QP13040959	3503		4822 116 52235	1MΩ ±5% 0.5W	QP11652235
7431					3504		4822 116 52235	1MΩ ±5% 0.5W	QP11652235
7432		4822 130 44568	TRS. BC557B	QP13044568	3505		4822 116 83874	220kΩ ±5% 0.5W	QP11683874
7433		4822 130 44568	TRS. BC557B	QP13044568	3506		4822 116 83874	220kΩ ±5% 0.5W	QP11683874
7434		4822 130 40959	TRS. BC547B	QP13040959	3507		4822 116 83872	220Ω ±5% 0.5W	QP11683872
			MISCELLANEOUS		3508		4822 116 83872	220Ω ±5% 0.5W	QP11683872
1401		4822 276 13114	PUSH SWITCH TACT	QP27613114	3509		4822 116 52269	3.3kΩ ±5% 0.5W	QP11652269
1402		4822 276 13114	PUSH SWITCH TACT	QP27613114					

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, *:EUROPE)

POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
3510		4822 116 52269	3.3kΩ ±5% 0.5W	QP11652269	2263	PM-78	4822 124 40257	ELECT 220μF ±20% 63V	QP12440257
3511		4822 101 11788	VARIABLE 10kΩ TONE	QP10111788	2264	PM-68	4822 124 22572	ELECT 100μF ±20% 63V	QP12422572
3512		4822 101 11788	VARIABLE 10kΩ TONE	QP10111788	2264	PM-78	4822 124 40257	ELECT 220μF ±20% 63V	QP12440257
▲ 3513		4822 052 10479	47Ω ±5% 0.33W	QP05210479	2265	PM-68	4822 124 22572	ELECT 100μF ±20% 63V	QP12422572
▲ 3514		4822 052 10479	47Ω ±5% 0.33W	QP05210479	2265	PM-78	4822 124 40257	ELECT 220μF ±20% 63V	QP12440257
3515		4822 116 52207	1.2kΩ ±5% 0.5W	QP11652207	2266	PM-68	4822 124 22572	ELECT 100μF ±20% 63V	QP12422572
3516		4822 116 52207	1.2kΩ ±5% 0.5W	QP11652207	2266	PM-78	4822 124 40257	ELECT 220μF ±20% 63V	QP12422572
3517		4822 116 52291	56kΩ ±5% 0.5W	QP11652291	2267		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022
3518		4822 116 52291	56kΩ ±5% 0.5W	QP11652291	2268		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022
3519		4822 116 52207	1.2kΩ ±5% 0.5W	QP11652207	2269				
3520		4822 116 52207	1.2kΩ ±5% 0.5W	QP11652207	∫		5322 121 42386	FILM 100nF ±5% 63V	QQ12142386
					2272				
3521		4822 116 52291	56kΩ ±5% 0.5W	QP11652291	2273				
3522		4822 116 52291	56kΩ ±5% 0.5W	QP11652291	∫		4822 124 80141	ELECT 10nF ±10% 50V	QP12480141
▲ 3523		4822 052 10479	47Ω ±5% 0.33W	QP05210479	2276				
▲ 3524		4822 052 10479	47Ω ±5% 0.33W	QP05210479	2283		4822 124 40242	ELECT 1μF ±20% 63V	QP12440242
3525		4822 116 83872	220Ω ±5% 0.5W	QP11683872					
3526		4822 116 83872	220Ω ±5% 0.5W	QP11683872					
3527		4822 116 83874	220kΩ ±5% 0.5W	QP11683874					
3528		4822 116 83874	220kΩ ±5% 0.5W	QP11683874	3251		4822 116 52176	10Ω ±5% 0.5W	QP11652176
3529		4822 101 30828	VARIABLE 100kΩ BALANCE	QP10130828	3252		4822 116 52176	10Ω ±5% 0.5W	QP11652176
3537		4822 116 52269	3.3kΩ ±5% 0.5W	QP11652269	3253		4822 116 83874	220kΩ ±5% 0.5W	QP11683874
3538		4822 116 52269	3.3kΩ ±5% 0.5W	QP11652269	3254		4822 116 83874	220kΩ ±5% 0.5W	QP11683874
3539		4822 116 52234	100kΩ ±5% 0.5W	QP11652234	3255		4822 050 11002	1kΩ ±1% 0.4W	QP05011002
3540		4822 116 52234	100kΩ ±5% 0.5W	QP11652234	3256		4822 050 11002	1kΩ ±1% 0.4W	QP05011002
					3257		4822 116 52264	27kΩ ±5% 0.5W	QP11652264
					3258		4822 116 52264	27kΩ ±5% 0.5W	QP11652264
					3259		4822 116 52213	180Ω ±5% 0.5W	QP11652213
6201					3260		4822 116 52213	180Ω ±5% 0.5W	QP11652213
∫		4822 130 31878	DIODE 1N4003G	QP13031878	3261		4822 116 83872	220Ω ±5% 0.5W	QP11683872
6204					3262		4822 116 83872	220Ω ±5% 0.5W	QP11683872
					3263		4822 100 11213	TRIMMING 22kΩ ±30% 0.1W	QP10011213
					3264		4822 100 11213	TRIMMING 22kΩ ±30% 0.1W	QP10011213
7201		4822 209 12715	IC L7915CV	QP20912715	3265				
▲ 7202		5322 209 71759	IC MCT7815CT	QQ20971759	∫		4822 116 83872	220Ω ±5% 0.5W	QP11683872
7203		5322 130 44349	TRS. BC635	QQ13044349	3270				
7501		4822 209 73064	IC NJM2068DD	QP20973064	3271		4822 116 52243	1.5kΩ ±5% 0.5W	QP11652243
7502		4822 209 73064	IC NJM2068DD	QP20973064	3272		4822 116 52243	1.5kΩ ±5% 0.5W	QP11652243
7503		4822 209 73064	IC NJM2068DD	QP20973064	3273		4822 050 11002	1kΩ ±1% 0.4W	QP05011002
					3274		4822 050 11002	1kΩ ±1% 0.4W	QP05011002
					3275		4822 116 83884	47kΩ ±5% 0.5W	QP11683884
1201		4822 071 55001	FUSE 500MA	QP07155001	3276		4822 116 83884	47kΩ ±5% 0.5W	QP11683884
1202		4822 071 55001	FUSE 500MA	QP07155001	3276		4822 116 83872	220Ω ±5% 0.5W	QP11683872
1500		4822 276 13882	PUSH SWITCH DIRECT	QP27613882	3277	PM-68	4822 116 52228	680Ω ±5% 0.5W	QP11652228
					3277	PM-78	4822 116 52228	680Ω ±5% 0.5W	QP11652228
					3278	PM-68	4822 116 83872	220Ω ±5% 0.5W	QP11683872
					3278	PM-78	4822 116 52228	680Ω ±5% 0.5W	QP11652228
					3279				
					3284		4822 050 11002	1kΩ ±1% 0.4W	QP05011002
2251		4822 124 12023	ELECT 47μF ±20% 25V	QP12412023					
2252		4822 124 12023	ELECT 47μF ±20% 25V	QP12412023	3285		4822 116 52264	27kΩ ±5% 0.5W	QP11652264
▲ 2253		4822 122 33197	CER. 1nF ±10% 50V	QP12233197	3286		4822 116 52264	27kΩ ±5% 0.5W	QP11652264
▲ 2254		4822 122 33197	CER. 1nF ±10% 50V	QP12233197	3287		4822 116 83868	150Ω ±5% 0.5W	QP11683868
2255		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022	3288		4822 116 83868	150Ω ±5% 0.5W	QP11683868
2256		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022	3289	PM-68	4822 116 83874	220kΩ ±5% 0.5W	QP11683874
2257	PM-68	4822 122 33519	CER. 470pF ±10% 50V	QP12233519	3289	PM-78	4822 116 83884	47kΩ ±5% 0.5W	QP11683884
▲ 2257	PM-78	4822 126 12339	CER. 2.2nF ±10% Y5R	QP12612339	3290	PM-68	4822 116 83874	220kΩ ±5% 0.5W	QP11683874
2258	PM-68	4822 122 33519	CER. 470pF ±10% 50V	QP12233519	3290	PM-78	4822 116 83884	47kΩ ±5% 0.5W	QP11683884
▲ 2258	PM-78	4822 126 12339	CER. 2.2nF ±10% Y5R	QP12612339	3291	PM-68	4822 116 83874	220kΩ ±5% 0.5W	QP11683874
2259	PM-68	4822 126 14164	CER. 10pF ±5% 500V	QP12614164	3291	PM-78	4822 116 83884	47kΩ ±5% 0.5W	QP11683884
2259	PM-78	4822 126 11947	CER. 4.7pF ±5% 50V	QP12611947	3292	PM-68	4822 116 83874	220kΩ ±5% 0.5W	QP11683874
2260	PM-68	4822 126 14164	CER. 10pF ±5% 500V	QP12614164	3292	PM-78	4822 116 83884	47kΩ ±5% 0.5W	QP11683884
2260	PM-78	4822 126 11947	CER. 4.7pF ±5% 50V	QP12611947	3293		4822 116 83868	150Ω ±5% 0.5W	QP11683868
2261	PM-68	4822 122 33519	CER. 470pF ±10% 50V	QP12233519	3294		4822 116 83868	150Ω ±5% 0.5W	QP11683868
▲ 2261	PM-78	4822 122 33197	CER. 1nF ±10% 50V	QP12233197	▲ 3295	PM-68	4822 052 10479	47Ω ±5% 0.33W	QP05210479
2262	PM-68	4822 122 33519	CER. 470pF ±10% 50V	QP12233519					
▲ 2262	PM-78	4822 122 33197	CER. 1nF ±10% 50V	QP12233197					
2263	PM-68	4822 124 22572	ELECT 100μF ±20% 63V	QP12422572					

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
▲ 3295	PM-78	4822 052 10109	10Ω ±5% 0.33W	QP05210109	6267				
▲ 3296	PM-68	4822 052 10479	47Ω ±5% 0.33W	QP05210479	┘		5322 130 34834	DIODE BZX79-C3V6	QQ13034834
▲ 3296	PM-78	4822 052 10109	10Ω ±5% 0.33W	QP05210109	6270				
▲ 3297	PM-68	4822 052 10479	47Ω ±5% 0.33W	QP05210479	▲ 6271		4822 130 30621	DIODE 1N4148	QP13030621
▲ 3297	PM-78	4822 052 10109	10Ω ±5% 0.33W	QP05210109	▲ 6272		4822 130 30621	DIODE 1N4148	QP13030621
▲ 3298	PM-68	4822 052 10479	47Ω ±5% 0.33W	QP05210479	6273				
▲ 3298	PM-78	4822 052 10109	10Ω ±5% 0.33W	QP05210109	┘		4822 130 30842	DIODE BAV21	QP13030842
3299		4822 101 11787	TRIMMING 100Ω ±30% 0.1W	QP10111787	6278				
3300		4822 101 11787	TRIMMING 100Ω ±30% 0.1W	QP10111787	▲ 6279		4822 130 30621	DIODE 1N4148	QP13030621
3301		4822 116 83876	270Ω ±5% 0.5W	QP11683876	▲ 6280		4822 130 30621	DIODE 1N4148	QP13030621
3302		4822 116 83876	270Ω ±5% 0.5W	QP11683876	▲ 6281		4822 130 30621	DIODE 1N4148	QP13030621
3303		4822 116 52207	1.2kΩ ±5% 0.5W	QP11652207	▲ 7251				
3304		4822 116 52207	1.2kΩ ±5% 0.5W	QP11652207	┘		4822 130 43233	TRS. 2SC2240GR	QP13043233
					▲ 7256				
3305		4822 116 80176	1Ω ±5% 0.5W	QP11680176	7257				
3306		4822 116 80176	1Ω ±5% 0.5W	QP11680176	┘		4822 130 42949	TRS. 2SA970GR	QP13042949
▲ 3309	PM-78	4822 100 20166	TRIMMING 10kΩ ±30% 0.1W	QP10020166	7260				
▲ 3310	PM-78	4822 100 20166	TRIMMING 10kΩ ±30% 0.1W	QP10020166					
3311	PM-78	4822 050 11002	1kΩ ±1% 0.4W	QP05011002	▲ 7261		4822 130 43233	TRS. 2SC2240GR	QP13043233
3312	PM-78	4822 050 11002	1kΩ ±1% 0.4W	QP05011002	▲ 7262		4822 130 43233	TRS. 2SC2240GR	QP13043233
▲ 3313					7263		4822 130 61009	TRS. 2SC3423 O	QP13061009
┘		4822 052 10101	100Ω ±5% 0.33W	QP05210101	7264		4822 130 61009	TRS. 2SC3423 O	QP13061009
▲ 3316					7265		5322 130 61728	TRS. 2SA1360-Y	QQ13061728
▲ 3317					7266		5322 130 61728	TRS. 2SA1360-Y	QQ13061728
┘		4822 052 10681	680Ω ±5% 0.33W	QP05210681	▲ 7267		4822 130 60117	TRS. 2SC3419	QP13060117
▲ 3320					▲ 7268		4822 130 60117	TRS. 2SC3419	QP13060117
▲ 3321					▲ 7269	PM-78	4822 130 90347	OPT. UNIT PC817	HW10006320
┘		4822 052 10479	47Ω ±5% 0.33W	QP05210479	▲ 7270	PM-78	4822 130 90347	OPT. UNIT PC817	HW10006320
▲ 3324		4822 052 10479	47Ω ±5% 0.33W	QP05210479	7271		4822 130 41646	TRS. BF423	QP13041646
▲ 3325		4822 052 10151	150Ω ±5% 0.33W	QP05210151	7272		4822 130 41646	TRS. BF423	QP13041646
▲ 3326		4822 052 10151	150Ω ±5% 0.33W	QP05210151	7273		4822 130 41782	TRS. BF422	QP13041782
▲ 3327					7274		4822 130 41782	TRS. BF422	QP13041782
┘		4822 052 10109	10Ω ±5% 0.33W	QP05210109					
▲ 3334					▲ 7275		4822 130 63634	TRS. 2SA1837Y	QP13063634
▲ 3335					▲ 7276		4822 130 63634	TRS. 2SA1837Y	QP13063634
┘		4822 117 12344	0.18Ω x2 ±10% 3W	QP11712344	▲ 7277		4822 130 10941	TRS. 2SC4793	QP13010941
▲ 3338					▲ 7278		4822 130 10941	TRS. 2SC4793	QP13010941
▲ 3339					▲ 7279	PM-68	4822 130 10942	TRS. 2SA1941	QP13010942
┘		4822 050 21002	1kΩ ±1% 0.6W	QP05021002	▲ 7279	PM-78	4822 130 10983	TRS. 2SA1962	QP13010983
▲ 3342					▲ 7280	PM-68	4822 130 10942	TRS. 2SA1941	QP13010942
3343		4822 116 52257	22kΩ ±5% 0.5W	QP11652257	▲ 7280	PM-78	4822 130 10983	TRS. 2SA1962	QP13010983
3344		4822 116 52257	22kΩ ±5% 0.5W	QP11652257	▲ 7281	PM-68	4822 130 10943	TRS. 2SC5198	QP13010943
					▲ 7281	PM-78	4822 130 10984	TRS. 2SC5242	QP13010984
3345		4822 116 52289	5.6kΩ ±5% 0.5W	QP11652289					
3346		4822 116 52257	22kΩ ±5% 0.5W	QP11652257	▲ 7282	PM-68	4822 130 10943	TRS. 2SC5198	QP13010943
3347	PM-68	4822 116 52297	68kΩ ±5% 0.5W	QP11652297	▲ 7282	PM-78	4822 130 10984	TRS. 2SC5242	QP13010984
3347	PM-78	4822 116 83882	39kΩ ±5% 0.5W	QP11683882	▲ 7283	PM-68	4822 130 10942	TRS. 2SA1941	QP13010942
3348		4822 116 52257	22kΩ ±5% 0.5W	QP11652257	▲ 7283	PM-78	4822 130 10983	TRS. 2SA1962	QP13010983
3349		4822 116 52297	68kΩ ±5% 0.5W	QP11652297	▲ 7284	PM-68	4822 130 10942	TRS. 2SA1941	QP13010942
3350		4822 116 52297	68kΩ ±5% 0.5W	QP11652297	▲ 7284	PM-78	4822 130 10983	TRS. 2SA1962	QP13010983
▲ 3351		4822 052 10221	220Ω ±5% 0.33W	QP05210221	▲ 7285	PM-68	4822 130 10943	TRS. 2SC5198	QP13010943
▲ 3352		4822 052 10221	220Ω ±5% 0.33W	QP05210221	▲ 7285	PM-78	4822 130 10984	TRS. 2SC5242	QP13010984
3353		4822 117 10814	10Ω ±5% 3W	QP11710814	▲ 7286	PM-68	4822 130 10943	TRS. 2SC5198	QP13010943
3354		4822 117 10814	10Ω ±5% 3W	QP11710814	▲ 7286	PM-78	4822 130 10984	TRS. 2SC5242	QP13010984
▲ 3355		4822 053 11331	330Ω ±5% 2W	QP05311331	▲ 7287		4822 130 43233	TRS. 2SC2240GR	QP13043233
▲ 3356		4822 053 11331	330Ω ±5% 2W	QP05311331	▲ 7288		4822 130 43233	TRS. 2SC2240GR	QP13043233
3369	PM-78	4822 050 11002	1kΩ ±1% 0.4W	QP05011002	7289		4822 130 42949	TRS. 2SA970GR	QP13042949
3370	PM-78	4822 050 11002	1kΩ ±1% 0.4W	QP05011002					
			SEMICONDUCTORS					MISCELLANEOUS	
▲ 6251					1255		4822 265 11068	TERMINAL SPEAKER LEFT	QP26511068
┘		4822 130 30621	DIODE 1N4148	QP13030621	1266		4822 265 11069	TERMINAL SPEAKER RIGHT	QP26511069
▲ 6266									
					▲ 5268		4822 280 70354	RELAY VB-24MBU-510	QP28070354
					▲ 5269		4822 280 70354	RELAY VB-24MBU-510	QP28070354
					▲ 5270		4822 280 20501	RELAY MR62-24SR	QP28020501

POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO.	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
5351		4822 157 70599	COIL SPK.OUTPUT	QP15770599	2209		4822 121 51319	FILM 1μF ±10% 63V	QP12151319
5352		4822 157 70599	COIL SPK.OUTPUT	QP15770599	2210		4822 124 40242	ELECT 1μF ±20% 63V	QP12440242
			SPK PROTECT CIRCUIT BOARD CAPACITORS		2211		4822 124 80141	ELECT 10nF ±10% 50V	QP12480141
▲ 2277		4822 121 51387	FILM 10nF ±20% 16V	QP12151387	2212		4822 124 80141	ELECT 10nF ±10% 50V	QP12480141
▲ 2278		4822 124 40433	ELECT 47μF ±20% 25V	QP12440433	2214		5322 121 42498	FILM 680nF ±5% 63V	QQ12142498
▲ 2279		4822 124 40433	ELECT 47μF ±20% 25V	QP12440433	2302		4822 124 12022	ELECT 220μF ±20% 25V	QP12412022
2281		4822 124 40242	ELECT 1μF ±20% 63V	QP12440242	2304		5322 124 22229	ELECT 1000μF ±20% 35V	QQ12422229
▲ 2282		4822 124 40433	ELECT 47μF ±20% 25V	QP12440433	▲ 2305		4822 124 40433	ELECT 47μF ±20% 25V	QP12440433
			RESISTORS		2401		4822 126 13325	CER. 100nF ±10% 16V	QP12613325
3357		4822 116 83884	47kΩ ±5% 0.5W	QP11683884	▲ 9211		4822 121 51387	FILM 10nF ±20% 16V	QP12151387
▲ 3358		4822 053 10103	10kΩ ±5% 1W	QP05310103				RESISTORS	
3360		4822 116 83874	220kΩ ±5% 0.5W	QP11683874	3204		4822 050 26808	6.8Ω ±1% 0.6W	QP05026808
3361		4822 116 52271	33kΩ ±5% 0.5W	QP11652271	▲ 3207		4822 052 10108	1Ω ±5% 0.33W	QP05210108
3362		4822 116 52291	56kΩ ±5% 0.5W	QP11652291	▲ 3208		4822 052 10479	47Ω ±5% 0.33W	QP05210479
3364		4822 053 10223	22kΩ ±5% 1W	QP05310223	▲ 3209		4822 052 10479	47Ω ±5% 0.33W	QP05210479
3365		4822 116 52234	100kΩ ±5% 0.5W	QP11652234	3210		4822 116 52234	100kΩ ±5% 0.5W	QP11652234
			SEMICONDUCTOR		3211		4822 116 52234	100kΩ ±5% 0.5W	QP11652234
▲ 7290		4822 209 83312	IC TA7317P	QP20983312	3217	PM-78	4822 053 10229	22Ω ±5% 1W	QP05310229
			SPK SW CIRCUIT BOARD		3218	PM-78	4822 053 10229	22Ω ±5% 1W	QP05310229
			CAPACITORS					SEMICONDUCTORS	
2533		4822 124 80141	ELECT 10nF ±10% 50V	QP12480141	▲ 6202		4822 130 30621	DIODE 1N4148	QP13030621
2534		4822 124 80141	ELECT 10nF ±10% 50V	QP12480141	▲ 6204		4822 130 30621	DIODE 1N4148	QP13030621
			RESISTORS		6206		4822 130 10944	DIODE BRIDGE GBU6D	QP13010944
3530		4822 116 52256	2.2kΩ ±5% 0.5W	QP11652256	∫	PM-78	4822 130 31878	DIODE 1N4003G	QP13031878
3531		4822 116 52256	2.2kΩ ±5% 0.5W	QP11652256	6209				
3532		4822 116 52257	22kΩ ±5% 0.5W	QP11652257	6210		4822 130 31878	DIODE 1N4003G	QP13031878
3533		4822 116 52176	10Ω ±5% 0.5W	QP11652176	∫				
3534		4822 116 52176	10Ω ±5% 0.5W	QP11652176	6216		4822 130 30621	DIODE 1N4148	QP13030621
3535		4822 116 52234	100kΩ ±5% 0.5W	QP11652234	▲ 6302		4822 209 80817	IC L7805CV	QP20980817
			SEMICONDUCTORS		▲ 7302			MISCELLANEOUS	
▲ 6529		4822 130 30621	DIODE 1N4148	QP13030621	▲ 1201		4822 276 12924	PUSH SWITCH,POWER	QP27612924
7529		4822 130 44283	TRS. BC636	QP13044283	▲ 1205		4822 070 32502	FUSE T2.5A 250V	QP07032502
7530		4822 130 44568	TRS. BC557B	QP13044568	▲ 1206	/02	4822 265 11009	MAINS OUTLET	QP26511009